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Task of the Planning Board

THE background to the Prime Minister's statement on the future of the British Transport Commission—and particularly the railways—was well known to the Government, and it is clear from its terms that some time must have been given to drawing up the principles which it wishes to have applied by the Planning Board. It would have been far better if, in announcing the intention to set up this body, Mr. Macmillan could have given its composition. Not only would that have enabled a more speedy start to be made on what must be a grave and exceedingly complex task, but it would have helped in an assessment of the weight which the planning board will carry both with industry and with the House of Commons. Moreover, it could have been of value in maintaining the morale of railway officers and men throughout the service at a time when, in the light of the sweeping changes contemplated by the Government, as reported on page 328, rumour and conjecture are bound to be rife. Names such as those of Sir Alexander Fleck, former Chairman of Imperial Chemical Industries Limited, and Lord Heyworth, retiring Chairman of Unilever Limited, have been mentioned in connection with the board, no doubt in part because of the high reputations they enjoy and because of their knowledge of the organisation and working of great successful undertakings in which disparate parts function together. Men of this calibre, if their services can be obtained, will have great influence. Not only the terms of reference of the board, but the limits within which it must draw up its report, would appear to be laid down in essence in the Prime Minister's statement. To that extent, its freedom both of exploration and recommendation would seem to be curtailed. This may be inevitable from the time at its disposal. It would appear that this is limited to some six months for legislation to implement the proposals it forecast for the autumn. For the evolution of a plan of this magnitude that is little time enough, particularly bearing in mind the long-lasting effects not only on the transport industry, but also on the nation's economy, which must be expected as a result of the findings.

Record Steel Production

BRITISH Steelmakers achieved a new production record in February, when they turned out steel at the rate of over 25,000,000 tons a year. Both steel and pig-iron output reached new record levels. The annual rate was 25,073,000 tons of steel compared with 24,511,000 tons in January, an actual output of just over 20,000,000 tons in 1959 and one of only some 10,000,000 tons in 1938. Steel production was at an average weekly rate of 482,200 tons compared with 471,400 tons in January and 347,400 tons in February, 1959. Capital expenditure by the industry was £99,000,000 in 1959 against £105,000,000 in the preceding year. The estimates of expenditure during the current year show a substantial increase. On the basis of past experience, it is considered that actual expenditure is likely to be some £120,000,000—£125,000,000. A large part of the increase forecast is involved by the strip mill construction programme. The rise which might have been expected in British Railways mineral traffic so far has not been very marked, but if the present rise in steel production continues, there should be a corresponding increase in railway receipts.

African Chairman of Nigerian Railway Corporation

AFTER serving as Chairman of the Nigerian Railway Corporation since its formation in 1955, Sir Ralf Emerson is to end his term of office on May 31, as recorded in our personal pages this week. This is in accordance with the terms of his agreement with the Government of Nigeria, and the Council of Ministers wishes to place on record " its deep appreciation of the services rendered " by him to the Nigerian Railway since his first appointment in 1953 as General Manager, a position which he relinquished in 1958. The Council has now decided that it is appropriate, in view of the approach of independence, for a Nigerian to be Chairman of the Corporation. Mention has been made on many occasions in this journal of the increase in the efficiency of the railway effected under Sir Ralf Emerson's guidance in the past few years, and to the initiation of new construction. Nigeria owes much not only to his personal qualities, but also to his long experience of railway management in India. This has been of great value when applied, with allowance for different circumstances, to West Africa. Editorial reference was made last week to the appointment of a commission of inquiry into the Corporation, because, it is stated, of its expected deficit and of the growth of road competition. It is not yet known when the commission will start its work, nor how long that will take. Until this matter is settled, Sir Ralf Emerson's services will be in full demand in Nigeria.

Planning Rail and Road Transport

THE firm belief of the Government in the need for an efficient railway system, for its modernisation and for a contented and competent railway staff was emphasised by Sir James Dunnett, Permanent Secretary to the Ministry of Transport, and principal guest of the Mansion House Association on Transport luncheon at the Connaught Rooms, London, last week. The modernisation plan, he pointed out, might have to be altered. A great deal of money, he stressed, had been spent

already on building and improving roads; a major road transport problem was the street congestion in large cities. The President of the Association, Mr. R. A. McNeile, a Director of Arthur Guinness, Son & Co. (Park Royal) Ltd., hoped that the planning board for the railways to be set up by the Government would consult industrialists and traders, especially in the matter of charges. As a large-scale consignor, he pressed for complete freedom of choice of the means of transport to ensure the reduction to the minimum of the transport element in manufacture and distribution costs and for re-shaping of the railways in the light of present-day needs. As a supporter of "C"-licence transport, he urged the need to provide, in town planning, loading and unloading space for road vehicles.

Manx Railways Hold Their Own

INCREASE in receipts of the Isle of Man Railway Company from £81,885 in 1958 to £83,320 last year, and reduction in expenditure from £77,310 to £74,821 shows what can be achieved by a small railway with efficient management in difficult circumstances. The balance of £8,499, with £3,500 dividend paid by the subsidiary company, Isle of Man Road Services Limited, and other items, leaves after deductions, a balance of £7,948, on which the board recommends payment of 5 per cent preference and 2½ per cent ordinary dividends. This is a creditable achievement for a 3-ft. gauge, steam-worked system in an island of short distances and increasing road traffic, where the railway is not always the most direct route and some stations are relatively far from the places they serve. Ownership of the bus undertaking has facilitated co-ordination of rail and bus services. Train services are considerably reduced in winter. The more frequent trains in summer, of smooth-riding bogie vehicles hauled by veteran 2-4-0 tank locomotives built by Beyer Peacock & Co. Ltd., in green livery with brass dome covers, have been popular.

Diversity of Careers on Railways

DESPITE the efforts by British Railways to publicise the interest and opportunities afforded by work on railways, few young men and boys and relatively few careers masters and other advisers of youth seem to appreciate them. They are succinctly described in "Railways as a Career" by Mr. Maxwell Taylor, the subject of brief notice on page 333. Many people think they know the nature and conditions of the jobs classified by the author as those of "railwaymen we see": drivers, guards, stationmasters, signalmen, shunters, and so on. The brief particulars given in this book will show how little they know. Two chapters on "railwaymen behind the scenes" outline admirably the duties of timetable staff (including use of the analogue computer), traffic controllers, signal engineers, and work in running sheds, goods depots, marshalling yards and locomotive, carriage and wagon workshops. A wide range of other jobs is lumped together, with apologies, as "the rest." It includes restaurant cars, publicity, railway police, research, establishment and staff, and legal matters and estate and rating—enough for a great diversity of aptitudes. The information on training and apprenticeship is well presented.

B.E.A.M.A. in 1959-60

CLOSE co-operation with the British Transport Commission in the British Railways modernisation programme is recorded in the report for 1959–60 of the British Electrical & Allied Manufacturers' Association. Through its Electric Traction Section, B.E.A.M.A. is playing a major part with the Locomotive & Allied Manufacturers' Association and the B.T.C. in the organisation of the British Railways Electrification Conference to be held in October, which includes an exhibition of locomotives and equipment constructed by members of the Association. The Switchgear Section also is co-operating with the management of British Railways, and will participate in the Conference exhibition. B.E.A.M.A. activities in Asia included the supply of technical literature to delegates attending the meeting in Lahore, last December, of the Railway Sub-Committee of the United Nations Economic Committee for Asia and the Far East; briefing of the British delegation was undertaken by all the associations concerned with railway problems through the U.K. Working Party for International Railway Conferences, on which B.E.A.M.A. is represented by the Head of its Overseas Division. An important decision taken during the year was that the Association should play a full part in the work of the United Kingdom Railway Advisory Service, recently established under the auspices of the Ministry of Transport.

Competitive Freight Service

ALTHOUGH often regarded primarily as a passenger line, the Western Region of British Railways carries a high volume of freight, which earns a considerably larger share of the Region's total revenue than does passenger traffic. Freight train operation is a function of railway work which must always be regarded as the backbone of a railway system, and the measures described this week in the article entitled "Modernisation of Freight Operation and Terminals in the Western Region," are designed to allow the Region to offer a fast and reliable freight service competitive with other forms of goods-carrying transport. Like other aspects of modernisation, the plans will take some years to complete, and their full effect will only become apparent when the programme is finished. Meanwhile, the Region is preparing the freight timetable of the future on the assumption that modernisation has already taken place. In this way, assessment can be made of the effect of the re-organisation on locomotive, signalling, and other sides of the programme. These developments will be described in later articles.

Centralised Research for British Railways

THE increasing cost of specialised equipment and instruments needed for modern forms of research work in large organisations makes it imperative that the widest use should be made of them in centralised laboratories. This is one of the factors which influenced the building of new chemical laboratories for British Railways which were formally opened last week by Sir Brian Robertson, Chairman of the British Transport Commission, at Muswell Hill, London. Reference to the ceremony is made elsewhere in this issue. The building, which is on the site of the former Alexandra Palace Station, accommodates the headquarters staff of the Chemical Services section of British Railways Research Department, the London Area Chemical Laboratory, the Building Materials Laboratory, and the Corrosion Laboratory, which were formerly at Euston, Stonebridge Park, Wimbledon, and Derby respectively. It also replaces the laboratories at Stratford of the former London & North Eastern Railway. This completes the first stage in the reorganisation and expansion of British Railways Research Department. The laboratories will make available the most economical research service for the railways and for other undertakings of the B.T.C.

Reconstruction of Mount Isa Line

NOW that the question of finance has been settled, the Queensland Government Railways is expected to make an early start on the rehabilitation of the 603-mile Townsville–Mt. Isa line. The bulk of the project will be carried out in three financial years following the present year. In that period more than £21,000,000 will be spent and nearly 5,000 man-years will be employed, the peak being reached in 1961-62. Cabinet approval has been obtained for the spending of £1,446,982 for 32,000 tons of steel rails and fishplates to be supplied at a rate of 1,200 tons a month. Approval has also been received for the conversion of 50 "W" class bogie platform wagons to "WR" class for carrying long rail lengths, and for the conversion of 15 "T" class four-wheel low-side wagons to plough wagons for ripping up existing ballast. Of the order for rails 31,500 tons will be of 82 lb. lengths, and 500 tons of 63 lb. lengths. The former will replace the 41¼-lb. and 42-lb. rails between Richmond and Duchess and the 63-lb. rails will be used for crossing loop extensions.

Permanent Way Alterations at Folkestone

WHEN phase 1 of British Railways, Southern Region, Kent Coast electrification scheme was completed in June last year, attention was immediately turned to the electrification of the main line to Folkestone and Dover via Ashford. Comple-

tion of the scheme is scheduled for June, 1962. One of the major works now in hand is the alteration of the layout at Folkestone Harbour Station. The alterations are necessary to allow the lengthening of platform 1 by 68 ft. to accommodate 12-car trains. Because of the magnitude of the task the station was closed to traffic from March 13 and a seven-day possession granted for the removal of the old rails and the laying in of six turnouts, one tandam and a scissor crossing. The crossings have been assembled in sections at Ashford and brought to the site by works trains in the order required. In this way the work is being carried out with the minimum of delay and the station will be ready to receive traffic on March 20.

New Signalbox at Edge Hill, Liverpool

A MINIATURE type of control panel, the first of its kind in the London Midland Region of British Railways, will be a feature of the power-operated signalbox now being built at Edge Hill, Liverpool. Superseding four existing mechanical boxes, the new box will control the area of Edge Hill Station and the approach lines from Olive Mount Junction and Allerton Junction from the Manchester and Crewe directions respectively. It is due for completion in July, 1961. Push-buttons will be positioned on a track diagram in correct geographical relationship, and each signalled movement will be initiated by two push-buttons which will control the entrance to and exit from the section concerned. This system, with colour-light signals, continuous track circuiting, and electro-pneumatically operated points will replace the existing mechanical signalling in the area. The installation, with extensive track re-modelling and transposition of the running lines between Edge Hill and Liverpool Lime Street, will afford a freer flow of traffic in and out of the latter terminus. The new work is part of the larger plan for improved signalling and electrification at 25 kV., 50 cycles, a.c. of the running lines between Crewe and Liverpool.

Replacement of Signalboxes

MANY signalboxes remain in all Regions of British Railways, often dating, with their lever frames, block apparatus and other equipment, from the days of the pre-grouping companies. They are generally of so distinctive an appearance that there is little difficulty in recognising who their original owners were. Some re-signalling schemes of recent years have eliminated many such boxes. Elsewhere actual replacement has been necessary. The Southern Region has had to frame a maintenance programme covering such work and a typical example of what is being done is seen in the new Exmouth Junction signalbox, described in this issue. The standard of comfort provided today is in marked contrast to that deemed sufficient in the last century. The signalling embodies considerably greater protection against operating mistakes than then was usual. The new box is capable of being modified readily to give the facilities required when the projected diesel servicing depot is erected nearby.

Aid to the Rapid Dismantling of Track

WITH adoption or expansion of C.T.C. in many countries singling of track is likely to be common. To facilitate rapid dismantling of track to be removed, and to obviate slow and costly spike-pulling, the engineers of the Baltimore & Ohio Railroad have devised a "ripper." This is a structural-steel box-like frame, rectangular in plan but with a nose at one end. The whole resembles a flat-bottom boat with a large-diameter steel bar projecting on each side at its rear end. Its width is such that it fits in between the track rails and it is towed by a work-train with cables attached to its nose. Preparatory work consists of the removal of all but two fish-bolts at each joint and the loosening of the remaining two; rail-anchors, if any, are also removed. Spikes are then pulled by hand for 1½ rail lengths and a pair of fish-plates is removed immediately in front of the ripper enabling the rails to be lifted and the projecting bars of the ripper to be pulled under the rails. The train and ripper then move forward at 3 m.p.h. The lower flanges of the ripper-frame hold the sleepers down while the projecting bars force upward successive rails. About 90 per cent of the spikes are found to be pulled in this way; the remainder are dealt with manually.

The Prime Minister on Railways

THE Prime Minister's statement in the House of Commons on March 10 definitely established two main points. The first of these was that the Government accepts the objective underlying the report of the Guillebaud Committee that fair and reasonable wages should be paid to railwaymen. The second is that there is to be a detailed re-organisation of the British Transport Commission. From these two points stem a variety of conclusions, some factual, and others still nebulous. The B.T.C. deficit now amounts to £350 millions, and, for 1960, it is estimated at £80 millions, of which the operating loss of the railways is put at £45 millions, including the 5 per cent interim addition to wages. In addition, the interest on advances to meet accumulated deficits is now running at some £15 millions. Obviously, therefore, finance is inextricably interwoven both with the recommendations of the Guillebaud Committee and with the re-organisation of the British Transport Commission.

The Prime Minister's speech is given in full elsewhere in this issue. Here it need only be pointed out that Government aid is essential if higher wages are to be paid and if the deficits are not to continue to accrue. Whatever shape this aid takes, it should not be in the form of an open-end subsidy but, in our view, should be a specific sum related to some physical asset of the railways. If it is not, there will be no safeguard against a constant drain on the Exchequer, and efficiency inevitably must suffer through lack of financial discipline. The new structure of the Commission is to be decided by a special planning board to be appointed by the Government, which will report both to the Commission and the Government. It is believed that the work of this body may be achieved within the next few months. Presumably, therefore, any necessary legislation could be introduced in the autumn session of Parliament, and passed through both Houses.

The unscrambling of the finances of the Commission on to a regional basis is an unenviable task, but the Commission is already seeking expert advice on the question of regional accounting. Wide variations in the relative prosperity of the Regions are inevitable. If some new capital structure is proposed, as it should be, there can be no doubt that a strong case can be made in present circumstances for the inclusion of equity capital as a buffer against economic vicissitude. This, indeed, is a measure which should have been adopted some years ago, when it became clear that the railways were intended to engage as commercial operators rather than as great corporation services. There can now be no question that any vestige remains of the so-called monopoly which the railways were once deemed to enjoy.

It would seem that some backing exists for a proposal to remove from the railways such ancillary businesses as catering, hotels, land, and so forth. It would appear to be a strange quirk of fate that, in times such as these, the most financially productive units should be removed from the main body of the railways which directly they serve. To hive off all remunerative undertakings and leave only the non-paying activities is a peculiar reversal of normal business procedure, and it may well be that the planning board will see the fallacy of this. There can be no doubt that, in many ways, the railways are legislatively hamstrung from making the best use of a great many of their assets, such as building sites and so forth, and the planning board could serve a useful purpose in helping to free the Commission from restrictions that are as out-moded as they are inequitable.

This will not be the first time in the past 12 years that the railways have had to suffer all the disturbance and frustration inevitably involved in a major organisational reconstruction. There can be no doubt that the present position makes inevitable new thinking on the whole structure of nationalised transport in this country. It is too late to go back, and it is fruitless to look over one's shoulder to pre-war days when all but one of the British railway systems was paying its way as a great commercial enterprise. If, as a result of the impending reconstruction, hope can be re-born of a remunerative life for a service that is essential to the national well-being, it will be worth while, unwelcome and unhappy though many of the actions which may have to be taken may be. The present modernisation plan is beginning to show results, and it is essential that, whatever else may be done, at least this should not be curtailed.

Parliament and the P.M's Statement

THE Prime Minister's statement on the position of the Commission was received with little satisfaction by Members on both sides of the House. This is understandable because it was imprecise and the Commission's future structure is still in the air. Some short-term financing to tide the Commission over when the present permitted borrowings for deficit financing are exhausted was inevitable and that has been assured, though the form it will take was not stated. The appointment of a planning board to determine the Commission's organisation, and presumably responsibilities, merely defers decision. No doubt it was chosen as a means to appease those Tory back-benchers who are pressing for the hiving-off of some of the Commission's ancillary undertakings and others who had tabled a motion demanding an inquiry. It gives the Government a good let-out because it passes the burden of decision to the chosen wise businessmen. As has frequently been stated in these columns, to segregate those sections of the Commission's business which are complementary to the railways, and others which may not be as essential but are profitable, would make no contribution to the solution of the Commission's financial troubles. On the other hand, the development of sites could, over a period, bring something into its treasury. Nor does it appear likely that the granting of complete autonomy to the regions, which is apparently envisaged, would materially aid the railways in their struggle toward solvency. In some respects it could be a retrograde step as it would require new machinery to be set up both for separate accounting and for administration as the present part-time boards are not designed for managerial functions. Further, some form of centralised consultation to ensure smooth running between regions and to retain the benefits that have flowed from centralised policy-making would be necessary. The greatest disadvantage of this further postponement of decision on the Commission's future is that those responsible for its operation, from the top through to the railwaymen themselves, are left in doubt as to where they stand. Morale has not been good but, with the implementation of the Guillebaud Report, and encouraging results at last beginning to flow from the modernisation programme, the opportunity exists for improvement here. Nothing is worse for any organisation than continued inquiry from outside and prolonged uncertainty as to its future.

While the Tory back-benchers must take some share of responsibility for this further postponement the Opposition has little to offer. The Parliamentary Labour Party has, apparently, after short and perfunctory discussion only, accepted a proposal put forward by its Shadow Chancellor of the Exchequer. Mr. Harold Wilson's suggestion is that the Government should assume responsibility for the whole of the Commission's capital liabilities, irrespective of how they arose, and pay a rent for the use of its assets. This rent, to operate as soon as the main modernisation was completed, would be fixed for a three-year period at a level within the Commission's earning power, given enterprising and efficient management. It would be revised triennially in the light of changes in such external factors as costs of supplies, the level of industrial activity and the current degree of road competition. This may be an ingenious scheme and one which understandably would appeal to the railway unions who dominate the Opposition transport group in Parliament, but it is complicated and it is difficult to contemplate it operating smoothly. Just how the imponderables on which the rent is to be based would be determined and how conflict between the Treasury and Commission over the figure could be avoided it is hard to envisage. It carries other disadvantages of which the chief are that it still leaves the Commission in continuous financial uncertainty and has all the faults of an open-end subsidy. Mr. Wilson argues to the contrary but the Commission might well be influenced by the fact that if it did well its rent would be increased and if it did badly it had nothing to lose as it would presumably be reduced. Incentive to efficiency would be that much the less.

As suggested in these columns a once-for-all capital reconstruction of the Commission is alone likely to ensure its future financial solvency. Despite the high cost of Guillebaud the outlook is not entirely depressing. The Commission in its reassessment of the results of the modernisation programme estimated a working surplus of £50 million to £100 million by 1963/4. Although the increases contemplated may cost up to £50 million it should not be impossible for the railways so to recover as the fruits of modernisation are reaped as to enable the lower figure ultimately to be reached, although it might be later than 1963. With some further streamlining of the railways, co-operation from the railwaymen in regard to productivity in return for the Guillebaud award, better morale, development of sites, and improvement in traffics with higher production, a working surplus should be attainable. If this be so, then the capital liabilities could be written down, by the assumption of part by the Government, to a level well within the estimated working surplus once the modernisation programme is complete. It could be done either by transferring responsibility for interest on the compensation stock to the Treasury or by permitting the Commission to borrow interest-free for modernisation provided this were made retrospective to the commencement of the programme. Meanwhile, the Government would have to continue to finance the deficits and relieve the Commission of responsibility for their repayment. To avoid the disadvantages of unlimited subsidy, the total deficits likely to accrue between now and completion of modernisation could be estimated and the subsidy so limited.

This once-for-all financial operation would at least have the advantage of letting the Commission know where it stood. Capital liabilities would be fixed within its ability to pay, and the target of earnings and the date by which it had to be reached determined. The disadvantages of open-end subsidy are thus avoided and the incentive to efficiency retained, both essential to the maintenance of morale and successful railway operation.

Indian Railways' Practice and Progress

THE remarkable progress made in recent years and ways in which the Indian Railway Board and the managements of some of the major Government-owned railways in the Republic of India are addressing themselves to the problems of safety in operation, electrification at 25 kV., and other matters were noted by Brigadier C. A. Langley, C.B.E., M.C., Chief Inspecting Officer of Railways, Ministry of Transport, on his visit to India last December. His observations are the subject of an article elsewhere in this issue. Brigadier Langley was one of three United Kingdom delegates to the Enlarged Meeting in New Delhi of the Permanent Commission of the International Railway Congress Association, as recorded in our February 12 issue; the others were Mr. K. W. C. Grand, Member of the British Transport Commission, and Mr. S. B. Warder, Chief Electrical Engineer, British Railways Central Staff. At the end of the meeting the Railway Board arranged an instructive tour and delegates were afforded opportunities of inspecting railway installations and working. Mr. Warder's impressions were the subject of an illustrated article on February 12.

Safety, including signalling, and inspection arrangements were the main subjects in which Brigadier Langley was interested, though several other aspects attracted his attention. Electrification at 25 kV., for instance, has complicated the watering of passenger stock, because of the danger from high-voltage overhead equipment to men filling tanks on the roofs. His remarks on allocating one steam locomotive to one crew or to a group of three, showing the effects of engine maintenance of varying practices in India, are of particular interest. As an officer of the Royal Engineers, Brigadier Langley received training and served as instructor, at the Railway Training Centre, Longmoor, and was seconded to the then Great Indian Peninsula (now Central) Railway in 1927-33 in connection with the electrification of the Bombay-Poona main line. He served in India during the last war as D.Q.M.G. (Movements & Transportation), Allied Land Forces, South East Asia Command. His experience of Indian railways, therefore, includes that of a large-scale user.

His recent tour, he feels, was an encouraging experience, and he was able to see at first hand some of the fine achievements during the last 12 years. Many major works have been planned and executed by Indian railwaymen with comparatively little outside assistance. The staff has been enlarged to meet this expansion, and replacements have been found for the British Officers who have left the service since Partition in 1941. This has led to the rapid promotion of junior officers and the recruitment of large numbers of new ones. Many of them, he states,

work long hours to keep abreast with the unceasing demands placed upon them, but devotion to duty and enthusiasm carry them through. He believes that there is a crusading spirit abroad, and railway officers are inspired by the knowledge that the prosperity of India depends largely on the rapid and efficient growth of the railways.

The campaign for self-sufficiency is prosecuted with vigour, and on the railways, for example, it is being increasingly achieved at the Chittaranjan Locomotive Works. In other branches of industry the drive is as great, as exemplified by the new steelworks and allied undertakings in Bihar and West Bengal, the foundation of a heavy electrical industry in Bhopal, and the growth of factories around the large centres of population. The high standard of new work on the railways where supervision is strict, was impressive, but Brigadier Langley points out that maintenance is a major problem affecting track, signalling, locomotives and rolling stock.

He found the Indian railway officers very receptive to new ideas and particularly keen to hear about British Railways, and records that many of them made remarks which might be paraphrased: "You British helped us to build our railways, our work is based on your rules and standards, and we have inherited your traditions. Naturally, we look to you for advice and we welcome it wholeheartedly." The United Kingdom Railway Advisory Service should go far to afford the advice which they seek.

British Transport Commission Traffic Receipts

NO strict comparison is possible between Period 2 of the current year, the four weeks to February 28, and that of 1959, which ended on February 22. Re-adjustment of the dates of periods has been necessary this year to enable the 13 28-day periods to cover the calendar year as far as possible.

Recapturing of merchandise traffic by British Railways is the main interest at present. In so far as comparison is possible with last year, figures for the second four-week period are disappointing. The explanation for the fall in merchandise receipts would appear to be the threat of the railway strike, which caused many consignors to choose other means of transport rather than risk delay; in many cases arrangements made before the strike was due to begin could not be altered when it was called off. Merchandise receipts for Period 2 at £7,841,000 nevertheless exceeded the figure for the preceding four weeks (£7,768,000).

	Four weeks to		Incr. or decr.	Aggregate for eight weeks to		Incr. or decr.
	Feb. 28, 1960	Feb. 22, 1959		Feb. 28, 1960	Feb. 22, 1959	
	1960 £000	1959 £000	£000	1960 £000	1959 £000	£000
Passengers—						
British Railways ...	8,775	8,228	+ 547	17,865	16,647	+ 1,218
London Transport: Road passenger services	4,206	3,816	+ 390	8,397	7,793	+ 604
Railways	1,881	1,809	+ 72	3,876	3,672	+ 204
Provincial & Scottish buses ...	4,057	3,933	+ 124	8,137	7,924	+ 213
Ships...	178	202	− 24	422	461	− 39
Total passengers ...	19,097	17,988	+1,109	38,697	36,497	+ 2,200
Freight, Parcels & Mails						
British Railways—						
*Merchandise & livestock ...	7,841	7,937	− 96	15,704	15,166	+ 538
*Minerals	3,831	3,581	+ 250	7,781	7,088	+ 693
Coal & coke ...	9,849	10,565	− 716	19,568	20,258	− 690
*Parcels, etc., by coaching train ...	4,032	3,976	+ 56	7,953	7,775	+ 178
*Total freight, British Railways	25,553	26,059	− 506	51,006	50,287	+ 719
Others†	4,504	4,024	+ 480	8,223	7,822	+ 401
Total freight, parcels & mails	30,057	30,083	− 26	59,229	58,109	+ 1,120
Total	49,154	48,071	+1,083	97,926	94,606	+ 3,320

* Includes receipts from collection and delivery
†Inland waterways freight, road haulage, and ships

The decrease in coal class traffic accords with the trend already in evidence, and interrupted at the new year by a demand for domestic fuel. The rise in mineral receipts again was less than might have been hoped for in view of increased steel output. At £3,831,000 mineral traffics during these four weeks are down on the Period 1 figure (£3,928,000). There was a noticeable increase in the freight traffic receipts of the other carrying activities of the British Transport Commission.

Total freight, parcels, and mails receipts of the Commission were £30,057,000 for Period 2, a slight increase on the previous four weeks, and roughly the same as a year ago. It is to be hoped that during the third period, now more than half over, the efforts made to capture railway traffic by improving services and by engaging on vigorous commercial campaigns, and the increased activity in the steel industry, will prove to have their effect on railway goods receipts.

Railway passenger traffic, both of British Railways and of the London Transport Underground, was also disappointing in showing little improvement. No doubt the strike threat had some effect.

PERCENTAGE VARIATION 1960 COMPARED WITH 1959

	Four weeks to February 28	Eight weeks to February 28
British Railways:		
Passengers	+6·6	+7·3
Parcels	+1·4	+2·2
Merchandise & Livestock	−1·2	+3·5
Minerals	+6·9	+9·7
Coal & Coke	−6·7	−3·4
Total	+0·1	+2·8
Ships (passengers)	−11·8	−8·4
British Road Services, Inland Waterways & ships (cargo)	+11·9	+5·1
Road Passenger Transport, Provincial & Scottish ...	+3·1	+2·6
London Transport:		
Railways	+3·9	+5·5
Road services	+10·2	+7·7
Total	+8·2	+7·0
Aggregate	+0·1	+3·5

Condensing Locomotives in South Africa

CONDENSATION effected under atmospheric pressure in the air-cooled condensers of 90 Class "25" 3-ft. 6-in. gauge 4-8-4 locomotives supplied to South African Railways in 1953-1955 for use in a region of acute water shortage has made possible a saving in water consumption of 85 per cent compared with freely exhausting locomotives. Despite the fact that condensation is favoured by the greatest possible temperature difference between the exhaust and ambient air, this result is achieved with the latter reaching over 100 deg. F. and at altitudes of up to 4,500 ft. where the condensation temperature drops to 200 deg. F. Compared with sea level conditions the altitude also accounts for about 60 per cent additional power needed to provide the cooling air supply. Other factors which adversely affect the percentage saving of water are the use of a mechanical stoker which necessitates the discharge of steam with the flue gases after blowing through the stoker nozzle plate in the firebox, the frequency and duration of boiler blowdown as determined by feed water quality, and the use of steam for train heating during the cold season.

The condensing locomotives have an aggregate mileage of 40,000,000 to their credit, corresponding to a monthly average of 5,000—6,000 miles over difficult terrain and hauling heavy trains in a single-line operation involving stand-by periods on loops. They have made it possible to dispense with some water stations and conditioning equipment in the Karroo section of the line between Capetown and Johannesburg, thereby eliminating substantial operating costs and benefiting the water economy of the region.

The locomotives were designed jointly by Henschel-Werke G.m.b.H. and the North British Locomotive Co. Ltd. in co-operation with the S.A.R. A detailed description together with operating experience was given in a paper by Professor Dr.-Ing. R. Roosen, of Henschel, read before a meeting of the Institution of Locomotive Engineers in London earlier this week. The design of the condensing tender and induced draught equipment on the locomotive was by Henschel which supplied the first locomotive and 60 of the tenders. The North British Locomotive Co. Ltd. supplied 89 locomotives and 30 condensing tenders. Separate orders were placed covering 50 non-condensing locomotives, Class "25" N C, of similar power to the Class "25" units, and 39 of these were built by the North British Locomotive Co. Ltd., the remaining 11 by Henschel.

The condensing version was assigned to duty on the 170-mile

section of line between De Aar and Touws River where the water shortage is particularly acute, especially during the winter months from April to September. The line is single track and handles the whole rail traffic between the Cape and Transvaal, including the numerous coal trains supplying the Cape area, in all about 25 trains daily in each direction. An indicated horsepower of 3,000 requiring a steaming rate of 55,000 lb. per hr. was demanded because of the need for high speed on the steep up grades; the amount of exhaust steam to be condensed is, therefore, about twice that of the converted Class " 20 " 2-10-2 S.A.R. locomotive used for tests and of earlier condensing locomotives. Problems faced in the design stage included the provision of a 16-in. exhaust-steam duct with flexible connections between the locomotive and tender, oil extraction from the exhaust, and details of the boiler feed system with turbo-driven pumps mounted on an intermediate condensate tank below the driver's cab.

Under conditions of maximum load a heat drop corresponding to a pressure of about 14 lb. per sq. in. above atmospheric, as would exist in the blast pipe of a standard S.A.R. locomotive, is all that is available for exploiting by the two turbines arranged in tandem in the exhaust steam. These drive, respectively, the smokebox induced-draught blower which absorbs about 150 h.p. and the five 7-ft. dia. vertical-axis cooling fans in the top of the tender which require a total of about 550 h.p. from the second turbine. The latter is located between the second and third fans and the output is transmitted through reduction gears to a horizontal line shaft. Energy is also lost from the exhaust steam by cooling in the long exhaust duct and in passing through the volute-type oil separator in the tender.

For the evacuation of 900 cu. ft. per sec. of flue gas a high velocity the blower wheel has an outside diameter of 36-in. Dr. Roosen describes how, originally, three long curved blades of 1-in. thick sheet steel, were used at a rotational speed of 3,300 r.p.m., but fairly rapid blade wear necessitated a reduction of speed by 25 per cent and an increase in the number of blades to five. The wheel can be replaced without disturbing oil-carrying parts in the drive from the turbine. About 70 per cent of the large amount of incombustible solids carried over by the flue gas is deflected and deposited in the self-cleaning smokebox from which it is returned to the flue gas current leaving the chimney by means of a steam ejector so that it does not pass through the blower.

The tubes and fins of the condensers which were supplied by GEA, Bochum, were made of copper and tinned in a bath. Evaporation heat dispersal is of the order of 27,000,000 B.T.U. and the air rate required under conditions of maximum ambient temperature amounts to about 800 lb. per sec. The 108-ton tender has two six-wheel bogies; with 20 tons of water and 19 tons of coal it is only about 5 ft. longer and not heavier than that of the Class " 25 " NC version which carries 46 tons of water and 18 tons of coal. Important general features of the locomotive include an advanced boiler design, a cast-steel frame with integral cylinders supplied by the General Steel Castings Corporation of the United States of America, and the use of roller bearings for axles, driving gear details, and turbine shafts.

A good example of finding a simple solution to a difficult problem is that recorded by Dr. Roosen concerning repairs made to secure the 4-in. long blades of the single-stage draught blower turbine rotors which, after about 12 months, suffered from erratic and unprecedented fractures. After reinforcement of the blade roots failed to cure the trouble it was found that the blades initially were becoming loose in the T-slots and the cause of this was traced to severe forces from heavy water blow because of carry-over from the boiler. Cylindrical taper pins were driven into the joints between adjacent blade roots in a manner similar to the normal method of securing the end blade which locked the others in position and which was found invariably to have remained intact. This successful method of dealing with all the blower turbines did not require dismantling of the blades and was carried out in the Touws River running shed. Although the tender fan turbine design is much more highly loaded it has not been the cause of any serious trouble.

Extraction of oil with which the steam became permeated in the cylinders was necessary because of the use of a closed water cycle. Excessive oil peaks at first were primarily accounted for by the occasional heavy water carry-over leading to a content of both free and emulsified oil. A comparatively simple remedy was developed in the form of a vortex water separator installed in the main steam pipe at the side of the boiler. Oil peaks then disappeared and the feed water oil level was reduced to less than one part per million with an occasional maximum of three.

A factor which influences the continued important role of the reciprocating steam locomotive in South Africa is the low price of indigenous coal, but it may well be that the example described here proves to be the last important special type of construction in its long history. Dr. Roosen believes that the experience and data gathered with these locomotives may become a valuable aid in the event of cooling units being used in the water cycle of some future nuclear-power or gas turbine locomotive with closed cycle, or in similar stationary applications.

Letters to the Editor

(*The Editor is not responsible for opinions of correspondents*)

The Victoria Line, L.T.E.

March 11

SIR,—It is disappointing to see that the station plans shown in the article in your March 11 issue have only a single platform fall on each running line. On underground systems separate entrance and exit platforms, enabling doors on both sides of a train to be used simultaneously, would make possible almost complete segregation of opposing passenger flows, and probably cut station time at peak periods to as little as one-quarter.

This would considerably increase the peak line capacity, and so justify the extra cost of construction.

Yours faithfully,

JOHN RODGERS

132, Worrin Road, Shenfield

First All-Roller-Bearing Locomotive

March 8

SIR,—Mr. J. T. Emmerton is to be congratulated on his intimate knowledge of early applications of ball and roller bearings to axleboxes for railway rolling stock, as evidenced by his letter published by you on February 26.

The S.K.F. axleboxes, using one spherical roller bearing and one cylindrical roller bearing, which were fitted in 1922 by the Great Northern and the Midland Railways were indeed unsuccessful by present-day standards. They did, however, represent a great stride forward in relation to the earlier designs mentioned by Mr. Emmerton.

The Great Northern application involved one coach only. According to records at my disposal no trouble was experienced until the coach had covered 420,000 miles, at which stage two bearings were replaced because of corrosion.

The installation on the Midland Railway was on a larger scale, involving 13 coaches in main-line express service. These were later transferred to the Tilbury Line and the last entry on the available records shows that after 18 years, in 1940, some attention was necessary due to the inner rings having crept on the journals, causing wear. Some of the boxes were then taken out of service as wartime production commitments did not allow of the manufacture of replacement bearings. Indications are that the remaining axleboxes eventually accumulated some 900,000 miles.

The combination of one cylindrical and one spherical roller bearing is not in itself unsound, the latter performing the dual duty of taking vertical and lateral loads; however, in the early 1920's there was insufficient knowledge of the problems arising in connection with the fit between inner rings and journal, coupled with the difficulty at the time to work to the fairly close journal tolerances called for. The introduction of two spherical roller bearings per axlebox made a more harmonious design, and further advantages were eventually reaped by the introduction of one spherical roller bearing only per box in cases where the bogie design lends itself to this arrangement.

Yours faithfully,

A. LAMM, M.I.LOCO.E.

The Skefko Ball Bearing Co. Ltd., Luton

THE SCRAP HEAP

Wash and Brush-up ?

In an article on brainwashing in the *Evening Standard*, an unfortunate misprint appeared: "These trainwashing methods are not allowed by the Geneva Convention and the British Army would not use them."

Euston Calling ! Euston Calling !

Euston Station has provided the Zoo with a Senegal yellow-vented parrot. The bird was seen fluttering about near the booking office and was caught. As there was no sign of an owner or of a cage from which it might have escaped, it was sent to the Zoo.—*From the "Daily Telegraph."*

Mixed Bag

The first sale this year by the Victorian Railways of lost property and unclaimed goods had some surprising items. In addition to the usual kitbags, suitcases, umbrellas, paint, and canned fruit, other items included two toy pianos, 48 packets chicken noodle soup, children's dresses, a set of weight lifting equipment, a 35 mm. slide projector, fish hooks and swivels, and bird cages. A total of 410 different lots were listed for sale.

A Policeman's Lot

A policeman ran to the middle of a railway track on March 9, stopped a train, and soon the branch-line diesel was chasing a bullock at 20 m.p.h. The cross-country dash started when the bullock jumped a gate and leaped 30 ft. down the railway embankment at Raydon near Ipswich, British Railways, Eastern Region. The constable ran to the middle of the track and put up his hand. He jumped on the train and gave the driver instructions. Before the train had gone half-a-mile, the bullock scrambled up the embankment and made for the fields. He took 7-ft. ditches and 6-ft. gates in his stride as 25 men gave chase by car, tractor and on horseback. Then he saw a herd of milking cows and trotted over. After that it was easy. He was herded into a cowshed.

Railway Band in Centenary Competition

A link between the railways and the first national brass band contest held in London a century ago is recalled by the preparations by Darlington British Railways Band to win two championship titles this year. The Darlington band has entered for the Northern Area Second division contest at Sunderland on March 26, and is rehearsing its test piece, a fantasia, "Gallions Reach," by Peter Yorke. If the band wins its Area contest, or is placed second or third, it can compete at the *Daily Herald* National Championship Finals in London next October. As the finals will mark the centenary of the national brass band contest, the Darlington players hope to travel to London not only as contenders for the national title but also as the reigning Northern champions of their class. One hundred years ago the Great Northern (Peterborough) and Great Eastern (London) Railways bands were among the entrants for the first national contest held at the Crystal Palace. Mr. F. Tompkins is to conduct the Darlington band in the contest at Sunderland.

Silencing Steam Locomotives

It always amuses me when I come up from or go down to the West Country to see a notice beside the lines not far from Paddington saying. "Keep engines silent." I often wonder how one keeps an engine silent apart from stopping it.—*Lt.-Commander S. L. C. Maydon, M.P. for Wells, in the Commons debate on the Noise Abatement Bill.*

Church for Sale

The Queensland Government Railways has a church for sale in Brisbane. For the past 16 years the church was known as the City Congregational, which has now transferred to a new £50,000 contemporary building.

The foundation stone was laid in 1864. About 20 years ago the Railways Department resumed the land on which it stands for expansion purposes. The Department proposes to drive a tunnel beneath the old church.

Petrol Station by Rail

A petrol service station was recently transported by rail from Montreal to Toronto, combining a most unusual railway shipment with a new technique in service station construction. The station was loaded in two halves on two flat wagons being picked up at the factory in Montreal, and delivered to a site at Long Branch, Ontario.

For the 344 mile trip, the shipment moved during daylight hours only and at reduced freight speed over the Canadian National Railways. This is Canada's first pre-fabricated steel service station and may open up a whole new trend in the construction of these buildings. Designed and developed by Petro Canada Limited the portable station is a full-size unit with all the plumbing, wiring, and other equipment built in. On reaching the permanent location, the two halves were bolted together and the new station, 28 ft. x 48 ft. in size, was ready for customers. Besides maintaining standardisation in a chain of service stations, the new development makes it possible to move a unit from one site to another instead of building a new station at the changed locations.

An Outstanding Locomotive

The aim of the Swiss Institute of Transport is not only to preserve technical proofs of the development of Swiss traffic, but also to be a place of instruction and contemplation. As an example there is the cogwheel locomotive of the Brünig section of the Swiss Federal Railways. This is a narrow-gauge compound tank locomotive with four cylinders and driving gear for adhesion and rack system Riggenbach, series HG 3/3, No. 1063. A portion has been cut away to show the working of its inside. It serves now as a model for demonstration. The different parts are marked in colours. The firebox is brown, the fire tubes are red, the steam in the boiler is light-blue and the water dark-blue. The passage of the steam from the steam dome to the regulator and through the main tubes to the steam slide valves in the cylinders can be followed easily. By operating the reversing gear the adhesion drive as well as the cogwheel drive (for the mountain portion of the railway) can be brought into action, which shows in an impressive way the working of a steam engine. The explanations will shortly be given over a loudspeaker in four languages.

Reproduced by permission of [*Gilbert Wilkinson and the "Daily Herald"*

"Daphne, you will please wear the uniform issued, and leave popularising the railway to others"

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA

Pay Commission Recommendations

Mr. S. R. Vasavada, President, National Federation of Indian Railwaymen, met the Chairman and Members of the Railway Board in New Delhi last month and explained to them the reactions of railwaymen to the recommendations of the Central Pay Commission and the decisions announced by Government thereon. After full and frank discussion, he was assured by the Railway Board that the problems relating to railwaymen would be dealt with with utmost sympathy and consideration. An early meeting will be held between the Railway Board and the National Federation of Indian Railwaymen.

Khajuriaghat-Malda Line

Khajuriaghat and Malda are to be connected by a broad-gauge line of approximately 23 miles. Sanction for the construction of the line has been given by the Railway Board, and the work has been entrusted to the North-East Frontier Railway administration.

This is part of a project which would link up Tildanga on the Eastern Railway in West Bengal to Malda on the North-East Frontier Railway in West Bengal, passing through Farakka and Khajuriaghat. When completed, the line is expected to reduce the distance from Calcutta to the Malda area and beyond by about 100 miles. This is expected to reduce congestion on the main line to Howrah.

On the partition of the country in 1947, the line of communication between Assam and the northern district of West Bengal, with the rest of India was completely disrupted. The districts of West Dinajpur and Malda could be approached only by the circuitous route via Maniharighat. The proposed new line will provide a direct link.

Barauni-Samastipur Line

The Railway Board has sanctioned the construction of a broad-gauge line of 33 miles from Barauni to Samastipur on the North Eastern Railway. The construction work has been entrusted to the North Eastern Railway Administration. Construction of this line is considered an operational necessity. On the opening of the Ganga Bridge at Mokameh in May last year the broad-gauge line was taken up to Barauni. The present line would extend it further to Samastipur, in North Bihar.

NEW ZEALAND

New Station at Nelson

Mr. Walter Nash, the Prime Minister, inaugurated work on the new station which is to be the Nelson terminal of the £10,500,000 line to Blenheim, where it will connect with the South Island main trunk line, on March 2.

Dealing with the economics of the new line, Mr. Nash cited a number of industries: tobacco, hop-growing, fruit and vegetables, mixed farming, timber milling and mineral production, which would benefit, but he emphasised that no railways paid their way in their first few years. They first created the development which would give them business. In this case not only Nelson, but the whole of the South Island and, with the rail ferry providing a Cook Strait bridge, the whole of the country would benefit. Speaking at the function, Mr. Moohan, Minister of Railways, said that the plans for the Cook Strait ferry would be ready by the end of the month. The Government would then call tenders for the construction of the ship.

SOUTH AFRICA

Information on Demurrage

The General Manager's office of the S.A.R. has prepared a guide containing information on demurrage on wagons. Copies are being made available free of charge to chambers of commerce, traders, and industrial and other railway users or owners of private sidings. The guide is intended to assist in the campaign to improve wagon turn-round. *Ad hoc* committees appointed two years ago on each System of the S.A.R. to inquire into the problem of delays in off-loading and loading, consist of senior railway officers and representatives of commerce and industry. Since the establishment of the committees much has been done to reduce delays.

NYASALAND

New Goods Depot at Blantyre

A new goods office and shed were opened recently by Nyasaland Railways at Blantyre, completing the second stage of re-building the station and associated installations. The end of the first stage was the completion in 1958 of the new passenger station, which allowed demolition of the old passenger station, used since 1908, to make room for the goods depot. The third stage is construction of additional sidings, loading banks, and so on, with room for private sidings and sheds as required, on land to be levelled and filled.

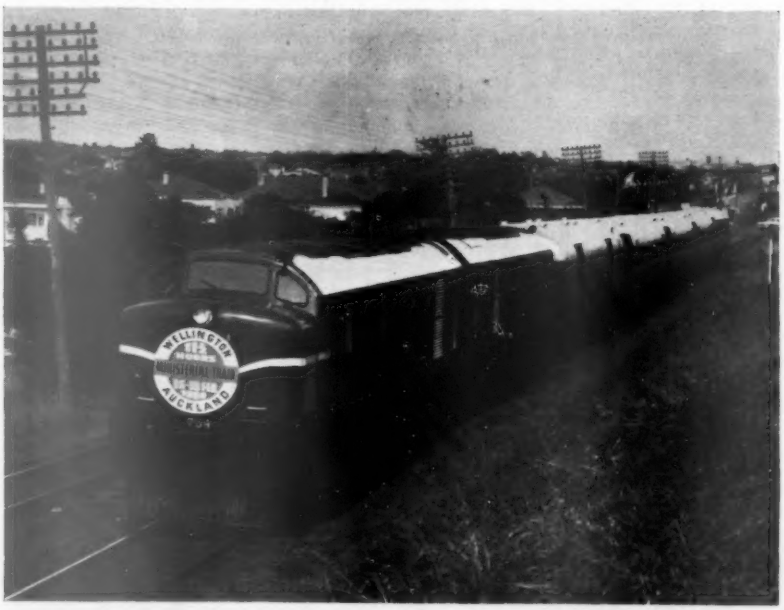
CANADA

Transport of Bulk Flour

A revolutionary method of transporting bulk shipments of flour has been successfully tested in Halifax, Nova Scotia. Designed to accelerate the movement of large shipments of flour over Canadian National Railway lines, new rail flour carriers, built by the Canadian

Wellington-Auckland Test Run, N.Z. Railways

(See our issue of March 4)



Test train hauled by two 750-h.p. Class "DG" English Electric diesel-electric locomotives coupled in multiple-unit, leaving Palmerston North on run to obtain data for a fast diesel railcar service

General Transit Company, are capable of carrying 100,000 lb. of flour. At the rail siding the flour is syphoned from the covered hopper-type rail wagons, which have a baked-on resin finished interior, to a road tank wagon. At the bakery warehouse the contents of the wagons are pumped under pressure into storage tanks. To expedite the movement of flour from the rail head to bakery storage, a custom-built aluminium tank wagon, capable of carrying 50,000 lb. of flour will be used. This new method of shipping does away with costly procedure of bagging flour, and reduces loading and unloading time.

IRELAND

District Traffic Officers' Conference

Commercial development was the theme of a two-day Coras Iompair Eireann District Traffic Officers' conference which ended in the Great Southern Hotel, Galway, on March 4. Addresses were delivered by Messrs. E. A. Grace, Assistant General Manager; D. Stewart, Traffic Manager; P. G. Byrne, Commercial Manager; and C. Kirwan, Operating Superintendent. Among the subjects discussed were 1960-61 passenger and freight development programmes and area management.

Summing up, Mr. Grace said that they were now almost at the end of the first year of the five-year term during which C.I.E. received a statutory annual subvention of £1,175,000. By March 31, 1964, they must have evolved not only a satisfactory and efficient transport system, but one which would pay its own way without any subsidisation.

Referring to decisions taken during the past year to substitute road for rail services on a number of branch lines, Mr. Grace said that these substitute road services were working extremely efficiently. Traders in these areas had assured him that they were completely satisfied with the new services. The keenness of the C.I.E. staff in serving the public had been a big factor in retaining the confidence of the public in these districts.

C.I.E., he said, had decided last year to introduce a major decentralisation programme for its Management. Outside Dublin the country was being divided into a number of areas and over each area a Manager was being appointed. Each Manager would have a great measure of autonomy and, in fact, apart from matters of major policy, would act as a General Manager for his area. At present applicants from within and outside C.I.E. for the new posts of Area Managers were being interviewed.

FRANCE

New D.C. Locomotives

Trials of the first of 35 class "9400" lightweight Bo-Bo locomotives for the 1,500-V. d.c. lines have included runs between Paris and Laroche for the purpose of strain gauge measurements. The strain gauges consist of wire elements attached to the components under investigation, which reproduce in the form of changing electrical resistance the stresses to which these parts are subjected while the locomotive is running at high speed. In this way data which could not be obtained by static tests are made available regarding components such as motor armature shafts, bogie equalisers, axles, and quill shafts. The "9400" class is the first for the d.c. lines to have single-motor bogies, and its weight of 59 *tonnes* compares with the 68 *tonnes* of the a.c. "16500" class, the only previous numerous series of locomotives with this feature. Comparative one-hr. ratings are 3,130 h.p. for the "9400" class and 3,600 h.p. for the "16500" class locomotives. Most of the "9400" class will be allocated to Avignon depot. The builders are the Société Fives-Lille Cail (mechanical parts), Compagnie Electro-Mécanique (main electrical equipment), and Scheider-Westinghouse (traction motors).

Monorail Demonstration

The first French suspended monorail was shown in action on a trial 1-km. circuit at Châteauneuf-sur-Loire, near Orléans, on February 23. The mayor of San Francisco, on a visit to France, was guest of honour at the demonstration and the manufacturers are to invite municipal authorities from the principal cities of the world to inspect this new form of urban transport.

The monorail has been devised by a group of 18 prominent French engineering companies and banks under the aegis of the Société Anonyme Française d'Etudes de Gestion et d'Entreprise. It consists of an aluminium coach, built by Régie Nationale des Usines Renault, which will hold 32 seated passengers with standing room for 91 more, slung beneath an overhead rail. It will travel at an average speed of 60 m.p.h., and the manufacturers claim that the rail would take coaches at 90 sec. intervals. Rubber-tyre bogies are used to deaden the noise and the working cost is put at about £1,600,000 a mile fully installed, compared with a cost of over £10,000,000 a mile for an underground railway.

Publications Received

Railways as a Career. By Maxwell Taylor. London: B. T. Batsford Limited, 4, Fitzhardinge Street, Portman Square, W.1. 7½ in. by 5 in. 128 pp. Illustrated. Price 12s. 6d.—Besides the good, brief descriptions of a great variety of employments on British Railways, including many unfamiliar to most young men and boys who are considering railway careers, this book presents a great deal of useful information on methods of entry training, and gaining experience, suited to the qualifications and aptitudes of those leaving school or university. The jobs range from engine driving to accountancy and from signalman to solicitor. One chapter is devoted to the training afforded to those already in railway employment, in courses at the British Transport Commission Staff College at Derby and elsewhere. The future of the railways, with some emphasis on the potentialities of the modernisation plan, is discussed, and the present organisation of British Railways is outlined clearly. The illustrations are well chosen and reproduced; most of them depict some new or recent installation or process. The style is well suited to intelligent young people. The impression is given of an organisation which uses up-to-date techniques and calls for high qualities in its servants. Sir John Benstead, Deputy Chairman of the British Transport Commission, contributes a preface.

Locomotives I have Known. By J. N. Maskelyne. London: Percival Marshall & Co. Ltd., 19-20, Noel Street, W.1. 12 in. by 9½ in. 133 pp. Illustrated. Price 42s.—The author is well known for his long association with model engineering. Much of his spare time was devoted to making drawings of steam locomotives, "to enable model locomotive enthusiasts to improve and vary their models." Some of the results of this work, reprinted from the *Model Engineer*, have been collated in this attractive book. Sixty-four locomotives from 13 British railways, which existed before grouping in 1923, and two from lines now forming part of the London Transport system, are included. Line drawings to scale, showing the side and front elevation, and a table of principal dimensions, are provided in every case. A pleasing embellishment is a half-tone reproduction of the crest of the company to which each locomotive belonged. Much of the information will interest all railwaymen and others concerned with locomotives, and there are some entertaining accounts of personal experiences. The coloured frontispiece, depicting a Wainwright 4-4-0 of the South Eastern & Chatham Railway finished in Brunswick green and red with elaborate lining, and a London & North Western Railway "Jumbo" 2-4-0 in "blackberry-black" livery, recalls vividly the pre-grouping scene.

Geschichte der Deutschen Eisenbahnen (*History of the German Railways*). By Berthold Stumpf. Mainz and Heidelberg: Verlagsanstalt Hüthig & Dreyer. 8 in. x 5¼ in. 108 pp. Illustrated. Price DM 6.80.—The complex early history of railways in the several States up to the establishment of the Empire in 1871 is clearly traced in the first 40 pages. Technical developments on the German State and German Federal Railways respectively before and after the war of 1939–45 are dealt with briefly, but the information is comprehensive and presented in an interesting manner. The illustrations, from early prints and recent photographs, are well chosen and reproduced. There is much information on State and private ownership. The present organisation of the Federal Railway is shown in a chart.

Recent Progress on the Indian Railways

Observations by Brigadier C. A. Langley, Chief Inspecting Officer of Railways, Ministry of Transport, on his recent tour

THE Indian Railway Board afforded the opportunity to travel many hundred miles over the railways to delegates attending the Enlarged Meeting in New Delhi in December, 1959, of the Permanent Commission of the International Railway Congress Association. Editorial reference to the meeting was made in our February 12 issue. Brigadier C. A. Langley, C.B.E., M.C., one of the three United Kingdom delegates, who is Chief Inspecting Officer of Railways, Ministry of Transport, was interested specially in matters of safety in signalling and operation.

For a week before the I.R.C.A. meeting, Brigadier Langley had discussions with Mr. D. C. Desai, Chief Government Inspector of Railways, and later attended a conference with that officer and representatives of the Railway Board and the Council of Scientific & Industrial Research. On arrival in India he went to Simla, travelling by diesel railcar over the 2-ft. 6-in. gauge Kalka–Simla Railway from Kalka. The ruling gradient is 1 in 33 and there are many curves of 140 ft. radius. Much work was in progress on pressure grouting of masonry in tunnels and bridges, repairs to retaining walls, and track maintenance. There is fierce competition from road transport, now that road vehicles are allowed to run to Simla, but the railway is still loaded to capacity during peak periods.

The Indian Railways Inspectorate, the headquarters of which has been in Simla since the days before Partition, was formed in 1908 and worked under the Railway Board until 1941 when a separate cadre of officers was established, and it was placed under the Department of Commerce, now the Ministry of Transport & Communications, which is quite distinct from the Ministry of Railways. The Government Inspectors are still recruited from the Civil Engineering Departments of the Indian Government Railways. There are at present five inspectors.

Work of the Inspectorate

The work of the Inspectorate is based on British practice, but it varies in certain material respects. The duties of the Government Inspectors are laid down in the Indian Railway Act of 1890 and comprise the inspection of new railways, the periodical inspection of existing railways and rolling stock, the investigation of train accidents and the holding of inquiries.

Since then the inspectors have been given additional duties covering: (1) sanctioning of new works and alterations to existing ones; (2) sanctioning use of electric traction; (3) use of new types of block instrument; (4) recommending new types of locomotive and rolling stock; (5) sanctioning maximum speeds; (6) sanctioning out-of-gauge loads; and (7) recommending the sanctioning of infringements of the structure gauge. The Railway Board, as the authority responsible for the safe operation of the railways, actually sanctions the use of new locomotives and rolling stock, etc., and confirms the sanction given by Government Inspectors to the opening of new lines and electrification projects. Since 1953 the periodical inspection of open lines by Government Inspectors has been discontinued and this duty has been transferred to General Managers and their officers. The Government Inspectors continue to inspect the few company-owned railways, and they accompany General Managers on some of their inspections to keep acquainted with current railway working.

Accident Investigation

Accident investigation also differs from British practice. The Government Inspector must (unless unavoidably prevented) hold inquiries into every accident to a passenger train involving loss of life or serious injury, or in which the estimated cost of damage is £1,500 or over. He may hold inquiries into any other train accident if in his opinion the circumstances warrant such action. He does not hold inquiries into accidents to the railway staff which in Great Britain are carried out by the employment inspectors.

The press and public are not admitted to the Government Inspector's inquiry, though the public are invited to give evidence. The reason given for this departure from British practice is that the evidence is not taken on oath and the Inspector's conclusions may lead to prosecutions in criminal courts. Thus the public hearing of witnesses might prejudice the subsequent judicial proceedings or the witnesses themselves. Since the operation of the railways is governed by a large number of statutory rules, disobedience of which is a criminal offence, the holding of the Inspector's Inquiry in private becomes necessary unless the evidence be taken on oath.

Besides hearing evidence the Inspector carries out detailed investigations at the site of the accident, and where necessary initiates tests and experiments to establish the cause. On completion of his investigations he submits a brief provisional report setting out his preliminary conclusions and this is published forthwith. Thereafter he completes his full report, which is sent to the Chief and other Government Inspectors and to the Railway Administration for their views and suggestions. The report is then finalised, and in the case of an important accident it is published, but without the Inspector's recommendations.

Occasionally, when serious accidents occur, a Commission, consisting of a High Court Judge and two other members, for example, a Member of Parliament and a retired General Manager, investigates and reports on the accident, in accordance with terms of reference laid down by the Government.

Electronic Safety Devices

A conference with officers of the Railway Board and members of the Council of Scientific & Industrial Research was then attended by Brigadier Langley in Delhi. The main object was to consider the development of electronic devices for the prevention of railway accidents. This was followed by the enlarged meeting of the I.R.C.A. Permanent Commission, on December 7–9. Delegates to the I.R.C.A. meeting left New Delhi by special train on December 10 for a tour of railway installations.

The party inspected Moghalsarai yard, the largest in India, at the focal point for the broad gauge railways of the Gangetic plain, where the Main and Grand Chord Lines of the Eastern Railway from Calcutta join the Northern Railway lines to Allahabad and Lucknow. Up traffic from the East is mainly coal for distribution to districts on the Allahabad and Lucknow lines. Down traffic is largely made up of rakes of empties returning to the coal fields and exports for the port of Calcutta. Originally designed for a capacity of only 1,400 wagons a day each way, the yard is now handling nearly double this traffic with hardly any additional facilities. The efficient operation of the up yard is the key to the work. It consists of 14 reception, 35 sorting, and 12 departure lines. Trains of 70 loaded wagons are handled over the 9-ft. hump and despatched to the sorting sidings through points mechanically operated from a 40-lever frame, the lever man receiving advice by code from the controller alongside the hump. The present average throughput is 2,500 wagons a day, but as many as 3,200 wagons have been handled in 24 hr. On the down side conditions are easier and a daily average of only 1,400 of the 2,500 wagons has to be dealt with.

Remodelling of Moghalsarai Yard

A major modernisation scheme is now in progress and the up yard is being remodelled with a new hump and electro-pneumatic retarders. The eventual average daily capacity will be 4,000 wagons each way. The down yard, however, is not being altered to any appreciable extent because most of the anticipated increase in traffic will be from coal and thus most of the down trains will be empties which can go direct to the collieries. Fly-overs are being built at each end of the yard to increase the overall throughput of trains, and the whole area extending for over four miles between the outer home signals will be equipped with colour-light signals. The delegates watched a train being put over the up hump, and the chief point of interest

was the speed with which so many wagons were handled in a simple mechanically-worked yard.

Chittaranjan Locomotive Works

The most impressive feature of the tour was the visit paid to the Chittaranjan Locomotive Works on December 13. Construction of these works with British technical aid and its ancillary township began in March, 1948, and production started in less than two years. Output has risen steadily from seven locomotives in 1950-51 to 165 in 1958-59, and it is expected that during the year ending this month, 175 locomotives will have been built. Production has been concentrated primarily on the standard "W. G." class broad gauge heavy goods engine with 2-8-2 wheel arrangement. This powerful engine has a nominal tractive effort of 39,000 lb. at 85 per cent of the designed boiler pressure of 210 lb. per sq. in. Its total weight with 18 tons of coal and 5,000 gals. of water in the eight-wheel tender is 177 tons. A few "W.T." 2-8-4 tank engines are also under construction and orders have been received for the manufacture of 36 "W.P." Pacific type passenger engines and spare boilers.

The visitors were much impressed by the layout, the machine tools and other equipment, and the high inspection standards maintained, and by the enthusiasm and *esprit de corps* of the many officers. A notable feature was the welding of a locomotive steel bar frame, and of a steel boiler which were in progress. The inspection included the X-ray room, where welds are tested. The photographs demonstrated the good results which are now being achieved. Special attention is paid to the training of welders who undergo a two-year course before they are allowed to handle this high-class work, and thereafter they receive refresher courses and tests every six months.

Apprentice Training

The party also paid a visit to the Technical School, where 120 apprentices and 20 supervisors are trained. The apprentices' course lasts for four years and the supervisors' for five, half of which is spent in the workshops. The apprentices live in hostels.

The installation at Chittaranjan includes the township of more than 5,000 quarters housing a population of 40,000 with all the amenities for a comfortable civic life. The township has cost almost as much to construct as the workshops, in round figures, £5,000,000 against £6,000,000.

The objective is to obtain self-sufficiency in locomotives. The work turned out in the shops is thought by Brigadier Langley to bear comparison with the best in the world. The scope of production is being further expanded in order to increase self-sufficiency. Work on a steel foundry with an initial capacity of 7,000 tons a year is expected to begin shortly and a galvanising plant is to be set up for galvanising steel masts for electrification projects, so conserving foreign exchange. Although up to now work has been concentrated on the construction of steam locomotives, the manufacture of electric locomotives will shortly be undertaken. An order has been placed for 10 3,000-V. d.c. locomotives and negotiations are under way for obtaining technical collaboration in the manufacture of 42 25-kV. a.c. locomotives. The town is also to be extended and plans are in hand to build another 1,000 quarters.

Electrification in Bihar and Bengal

Some of the delegates witnessed the trial run of the first a.c. electric locomotive in India, on the Kendposi–Dangoaposi section, referred to in our February 12 issue. Adoption of the 25-kV., a.c. system was a departure from the original policy, for the first phase of the Calcutta electrification project was installation of the 3,000 V. d.c. system now in operation from Howrah to Burdwan on the Eastern Railway main line and on the Sheoraphuli–Tarakeswar branch. The clearances provided on this system are sufficient for conversion to 25 kV. a.c. in due course, and on the Bandel–Burdwan section the insulators carrying the overhead equipment are in fact designed for use with the high voltage system.

The Kendposi branch line falls almost continuously from Dangoaposi, 1,531 ft. above sea level, to the main line and consequently mineral trains of 3,400 tons can be handled down it. The iron ore is carried in large side-discharge hopper bogie wagons of 60 tons capacity and 30 tons tare with axle-loads of 22½ tons. Two 1,800 h.p. diesel locomotives haul the goods trains at present, but they will be replaced by single electric locomotives as soon as work on the line is completed.

The electric car sheds at Howrah were visited on December 16, in the company of Mr. S. K. Gopinath, Chief Electrical Engineer, Eastern Railway. The 3,000 V. d.c. multiple-unit stock included vehicles built by British, Japanese, and Swiss firms. Also inspected was a Co-Co locomotive constructed by the English Electric Co. Ltd. Brigadier Langley rode on one of these engines between Burdwan and Bandel when the special train was on its way to Calcutta. It had no difficulty in handling the 11-coach train, but as speeds were low there was no opportunity for outstanding performance.

Watering of Coaches on Electric Lines

A problem which is arising in the electrified areas is the watering of carriages. Most of them are fitted for watering from the roofs, and important stations are equipped with overhead water pipes and hoses alongside the track. Power, therefore, has to be cut off from the overhead wires before men are allowed on to the carriage roofs.

At Burdwan, for example, insulators were provided at each end of the platform, and the man in charge of the watering gang received from the overhead equipment operator a green disc as a token that the insulator was open. Having received discs from the operator at each end of the platform he allowed his men to climb on to the carriages, and gave the authority by hoisting a white flag on a pole which he attached to the leading coach.

A journey by mail train from Calcutta *via* Nagpur to Bombay showed much civil engineering work in progress on the South Eastern Railway main line between Howrah and Nagpur. Work in progress included doubling in all its stages; formation work; track laying; bridges under construction; and completed sections carrying slow goods traffic. Single line working is being retained across the large rivers, where the cost of doubling the bridges cannot be justified at present. These short lengths may be fully track circuited and controlled by direction levers so as to save drivers from picking up single-line tokens at speed. This will be an improvement on the present arrangement whereby the engineman picks up on his bare arm a token on a bamboo ring at speeds of 50–60 m.p.h.

At Bhilai, where the large steelworks is being built, a mechanised marshalling yard is under construction and colour-light signalling installed on a section of the main line. Here and at other places on the railway kilometre posts had been erected in addition to mile posts, and that wagon capacities and tare weights were being shown in *tonnes* and kilogrammes as well as in tons and cwt. This is in readiness for the next stage in the conversion of the country to the metric system.

Ghat Sections of Central Railway

Besides the descent of the Western Ghats from Igatpuri to Kasara, *en route* to Bombay, a journey was made on the Bombay-Poona line. Both these sections of the Central Railway are electrified at 1,500 V. d.c.

Extensive diversions have been made on the Ghat sections to enable the structure gauge to be increased to take 12-ft. wide multiple unit stock in place of the old 10 ft. 8 in. wide stock. The work was completed in 1949, but so far the multiple unit service terminates at Kalyan.

On the outskirts of Kalyan there has been a great deal of industrial development. At one place the fumes from a factory were causing serious corrosion of the rails and the overhead equipment was covered with a green sulphurous deposit.

Between Victoria Terminus, Bombay and Kalyan a large mirror was observed at the mouth of Parsik Tunnel, to direct the sun's rays into the tunnel to facilitate work on the track. The light so obtained was stated to be better than that from lamps.

Relay Interlocking at Kurla

At Kurla, the O.C.S. (one control switch) system of route relay interlocking was inspected. This had been supplied by the Westinghouse Brake & Signal Co., through their Indian associates Saxby & Farmer (India), Limited, and installed by the Central Railway signalling staff.

At this junction the Harbour Branch double-line from Victoria Terminus converges with the Bombay-Kalyan four-track main line, and two more lines radiate outwards, one to Chembur and Mankhurd and the other to Trombay, the site of two of the biggest oil refineries

in the East. The whole area covers over three miles and originally it was controlled by six signalboxes with over 270 working levers and 34 block instruments. Movements now average nearly 650 trains and light engines daily and apart from the delay involved in handling them, co-ordination between the old boxes was becoming increasingly difficult, while the two-aspect semaphore signalling militated against the high speeds and close headway so essential for an intensive suburban and main-line service. With the further increase in this traffic modernisation of Kurla became a necessity.

New Power Box

Movements through the whole area, which is fully track-circuited to the adjoining boxes, is now controlled from a panel containing 112 route switches. The points are electro-pneumatically operated and signals are four-aspect searchlights with five-lamp route indicators (though three-aspects only are in use at present). The new box was only brought into operation in October, 1959. Brigadier Langley was informed that punctuality figures of trains arriving at Victoria Terminus had improved from about 81 to 91 per cent.

Frequency Drop

To maintain reliability in service, the transformers, rectifiers, and air compressors have been duplicated and power is taken from two independent sections of the Tata grid, but a serious failure occurred shortly after the installation was brought into use. Heavy pressure on the grid led to a frequency drop of nearly 2 per cent on both sections, resulting in some of the relays tripping. While attempting to get the installation working again the circuits were overloaded and a number of main fuses were blown. The relays had been designed to the British standard which provided for a frequency drop of only 1 per cent and it had not been appreciated that the Indian grid standard permitted a drop of up to 2 per cent.

The Harbour Branch, some 9½ miles long, was resignalled in 1928 with the first colour-light automatic signals in India and they are still giving good service.

This installation, as well as the resignalling of Victoria Terminus in 1929, was effected by the Westinghouse Brake & Signal Co. Ltd. Some trouble has been experienced through the years from track circuit failures especially during the monsoon, which is not altogether surprising, and from pilferage which is a serious problem for the railways throughout the country. The track circuit relays are now placed in the 4 ft. way and covered with steel plates fastened to the sleepers for protection.

The cleanliness of a good many main-line steam locomotives was noticeable. Engines are allotted to one driver or to a group of three drivers according to the shed practice and traffic requirements. These men take a great pride in their engines, which bear their names on plates. Drivers not only keep them clean but press the maintenance staff to carry out promptly all necessary running repairs.

Pooled v. Allocated Engines

At one running shed where the system of working express passenger trains had recently been changed from pooled to allocated engines, it was stated that the failure rate had improved from 1 in 40,000 miles to 1 in 100,000 miles. These drivers work a 10 hr. day with a maximum of 234 hr. a month. They are given a minimum of 6 hr. rest at an out-station and 12 at their home station, also four rest periods of 36 hr. each month or five of 24 hr. These hours are longer than those of British Railway drivers, and thus this system of allocation may not be as uneconomical as appears at first sight and may well be justified by the improved engine maintenance.

By contrast, the South Eastern Railway engines are pooled and the cleanliness of the " W.P." engine on which Brigadier Langley rode, was not up to the high standard of the allocated engines, but engine user was very good. For example, mail train engines based on Chakradharpur run from there to Nagpur thence to Calcutta and back to shed, a round trip of over 1,400 miles in about 60-70 hr., including short breaks at Nagpur and Calcutta for examination and oiling. At Bhusaval, where three drivers are allocated to an engine, comparable results afford the added advantage of cleaner engines and, probably, better maintenance.

Open Line Signalling

The maximum speed of 60 m.p.h. was seldom reached because of a tendency by all the drivers to shut off steam on approaching stations until they or their firemen had observed the outer signal. This is a stop signal which had to be observed at long range because at most stations there were no outer warners (distant signals).

On a number of occasions both by day and more especially by night the driver reduced speed to 40—45 m.p.h. until he had verified that the signal, and where applicable the warner under it, was clear (a clear warner under an outer is an indication that the other station signals are clear and that " line clear " has been obtained to the station ahead). This system of signalling has been in use for very many years and has proved satisfactory, largely because there is little or no fog ; alignments are generally straight on the approach to stations and these signals can be seen at long range. Speeds are not high, and goods and passenger trains are fully braked.

"High overall speeds," Brigadier Langley states, " will never be practicable until the distant signal as known in Great Britain has been introduced." He was told that these were being installed on lines where extra high speed trains are run, and he noticed some outer warners on the Eastern Railway. These were lower quadrant fish-tailed semaphores, placed about 6 ft. below the top of the post. At night there is a green lamp at the top of the post and the signal aspects are G over G or G over R, according to whether the warner is at clear or caution (at present all semaphore warners show R for caution, but always under a G). He understood that the latest practice was to introduce upper quadrant semaphores giving the equivalent of G, YY and Y indications for warners and G, Y and R for stop signals.

Marker Boards

On the Central Railway main line between Nagpur and Wardhaw black and yellow diagonal striped marker boards are placed at braking distances from the outer signals to give warning of their approach, but still the driver reduced speed before reaching the marker and did not open up again until he was satisfied that the outer was " off."

Colour-Light Signals

Three- and four-aspect colour-light signals are now being introduced on densely worked sections of the line, but it is doubtful whether they will replace semaphores as the principal signals in India, at least for a long time to come. In the first place, it will be many years before electric power is available at wayside stations, secondly, the pilferage problem will have to be resolved and the maintenance of electrical equipment, especially in the monsoon, will have to be improved. Finally, the semaphore signal in a country of bright sunshine is probably easier to see by day than a colour light, and if it is equipped with a modern high intensity oil lamp it should be easily identified at night. Distant signals or warners are, however, essential if high speeds are to be maintained.

Third Class Passenger Travel

Many improvements have been made in third-class passenger travel. At Delhi Station Brigadier Langley was shown some new third-class carriages. The standards of amenity are high, with electric fans, and more room and light available for passengers. Another innovation is the reservation of coaches for long-distance travellers in selected trains. Separate coaches are provided for passengers travelling 151—300 miles, 301—500 miles, and over 500 miles. Seats can be reserved and an attendant travels in each of the carriages carrying passengers for the two longest distances so as to ensure that the carriages are regularly cleaned and watered and that attention is paid to any electrical or other defect. Third-class " sleeper " coaches are also attached to some long-distance trains. Overcrowding is a serious problem, as is ticketless travel.

ONE STATION AT MACCLESFIELD.—Work will begin shortly on the amalgamation of Hibel Road and Central Stations, Macclesfield, British Railways, London Midland Region, and it is expected to be completed before the end of the year. Hibel Road will be demolished and all traffic handled at Central Station, where the modernisation will include provision of a down platform to accommodate 15-coach trains and an up platform to hold 13 coaches. A loop line will provide terminal facilities for local traffic.

Modernisation of Freight Operation and Terminals in the Western Region

An outline of the measures planned to achieve fast and reliable service competitive with other forms of freight transport

THE Western Region of British Railways is often regarded primarily as a passenger line, but the freight traffic (including coal) which it carries normally produces a considerably larger share of the total revenue than does passenger traffic.

The erroneous impression may have been caused by the fact that the region serves a consuming rather than originating area. The net ton-mileage of the Western Region is very similar to that of the Eastern Region and is in excess of all the other regions with the exception of the London Midland.

The Region serves the following four important industrial areas:—

South Wales
Bristol
Black Country (in association with the London Midland Region)
London (in association with other Regions).

There is also a smaller industrial area in the neighbourhood of Ruabon and Wrexham.

These are important manufacturing centres and it is interesting that, apart from the London Midland Region, the Western Region originates more general merchandise than any other region of British Railways. The modernisation of freight operation and terminals is an essential part of the Region's plans for future development.

It is the intention to concentrate at large depots the handling of smalls, full-load freight, and coal. In the past these traffics have been dealt with at a multiplicity of stations.

These major terminals, supported by a limited number of rail-served sub-depots, will serve territory within an approximate radius of 25 miles, but each scheme will require development in accordance with the type of country served.

It is possible to make a broad distinction between rural and industrial areas which will require different treatment, as under:

Rural Areas

The main depot will be situated at one of the most important towns in the area already normally used as the rail distribution point. Smalls traffic will be dealt with only at this terminal but sub-depots for full-load freight will be located, if necessary, in other important manufacturing towns within the area. Sub-depots for coal will also be left in most urban areas when it is found that satisfactory arrangements cannot be made to distribute wholly from the concentration centre.

All country goods stations will be closed entirely and the facilities removed except in a few places where some siding accommodation is required by the Chief Civil Engineer for maintenance of the line. Branches which are not required for passenger traffic or to serve sub-depots will be removed entirely.

Industrial Areas

The major concentration depot will be placed in the largest industrial centre. If the area includes several manufacturing centres of some importance. it may be necessary to have sub-depots for smalls traffic, which can pass in full wagon loads to and from other concentration depots. Sub-depots for full load freight are also envisaged in the larger towns, and facilities will have to be retained to deal with private siding traffic.

In industrial areas, it will not be possible to limit the handling of household coal to one or two stations. It is proposed to undertake as much concentration as possible so that all small goods stations can be closed and facilities removed.

In these areas there is little likelihood that many branch lines will be closed entirely because of the private sidings situated on them serving collieries or large works. Small private sidings handling only a few wagons daily will be treated in the same way as small stations.

Layout of Concentration Depot

A covered working depot will be required to handle smalls traffic economically, using all modern devices which may be available for the purpose. The mileage yard for handling the transfer of full-load freight traffic between rail and road will also be equipped with suitable mechanical appliances. The opportunity will be taken to see that the roadways are sufficiently wide to enable road vehicles to manoeuvre easily and sidings provided sufficient to hold approximately two days' normal traffic.

The coal yard will be equipped with modern devices to enable wagons to be discharged quickly and economically and should also be sufficiently large to hold two days normal traffic. This provision allows for some fluctuation in demand because it is the intention that all wagons should be discharged on the day of arrival.

At each of these major depots, a modern storage warehouse will be provided equipped for the use of pallets and fork-lift trucks.

It will not always be possible to provide all these facilities on the same site as it is regarded as more important that the facilities themselves should be adequate than that one site only should be used.

To enable shunting costs to be reduced to a minimum, a knuckle will be provided where necessary at the entrance to the yard so that incoming wagons can be sorted to their final positions in the yard by the train engine and avoid the continuous use of a shunting engine.

In rural areas, a marshalling yard normally is not required for inwards traffic as practically every wagon is destined for the concentration depot and no local distribution trains have to be marshalled to serve small country stations. Limited marshalling sidings are required near the depot for marshalling outward traffic.

In industrial areas, a marshalling yard is required to handle private siding and dock traffic. The concentration depot and and marshalling yard should be as near to each other as possible to keep the cost of tripping to the minimum. This applies to both inwards and outwards traffic although, in a few cases, it may be possible to work trains direct from one concentration depot to another without the need to pass through marshalling yards.

In most cases there will be insufficient traffic to do this or there will be a pressing need to amalgamate both private siding and depot traffic into one train.

So far, 16 main concentration depots have been planned for the Western Region and are given below in the approximate order in which they will be developed:—

Taunton
Plymouth
Shrewsbury
Cardiff
Exeter
Reading
Oxford
Swindon
Swansea
Hereford
Gloucester
Worcester
Slough
Bristol
Wolverhampton (full loads)
Wolverhampton (sundries)

The opportunity is being taken to consult with British Road Services in regard to the construction of these new depots and wherever possible to plan them in such a way as to enable them to serve both road and rail interests.

Marshalling Yards

Freight traffic can be roughly divided into two main categories as under:

1. General merchandise traffic, where speed is important and an assured arrival at destination is required.
2. Mineral, coal and heavy bulk traffic, which may vary considerably in volume and for which regularity of service is more important than speed.

Type (1) includes most of the freight traffic to and from concentration depots, while Type (2) consists largely of private siding and coal traffic. As explained above, block loads from one concentration point to another are not likely to be available very often and it will be neces-

sary to run through trains formed to attach and detach at marshalling yards en route. Most of the private siding traffic must pass through marshalling yards except where the volume is sufficient for train loads from one sender to one consignee.

Large hump yards are the most suitable means of marshalling Type 2 traffic economically but they are not generally suitable for Type 1 traffic. This requires detailed marshalling and it would be quite uneconomical to provide separate sorting sidings for small numbers of wagons in a hump yard.

To meet this situation, each yard is being provided with a smaller knuckle yard which will undertake marshalling and exchange of Type 1 traffic between through trains. These knuckle yards will also carry out the sectioning of local traffic transferred from the hump yard.

The best place to site a large marshalling yard is at the entrance to, or the centre of, an industrial area, where the traffic passing into and out of the area is sufficient to justify full train-loads to a large number of destinations. Alternatively, the yards must be placed at focal junction points where trains can be broken up and traffic re-marshalled for appropriate services forward.

The existing practice is to have comparatively small yards in all large towns and at junction points with other railways. Few of these yards are sufficiently large to enable many through trains to be made up and, in consequence, traffic has to be staged from one yard to another for re-marshalling.

Pre-Nationalisation Practice

Before nationalisation, it was the normal practice for each railway to operate a yard close to its boundary and for the traffic to be tripped between them. The development of the large hump yard which can handle well over 4,000 wagons daily makes possible the elimination of work at many smaller yards. Unification of the railways into one system has made it desirable to work through trains from one centre to another without regard to regional boundary points. The construction of concentration depots will further reduce the number of small yards required.

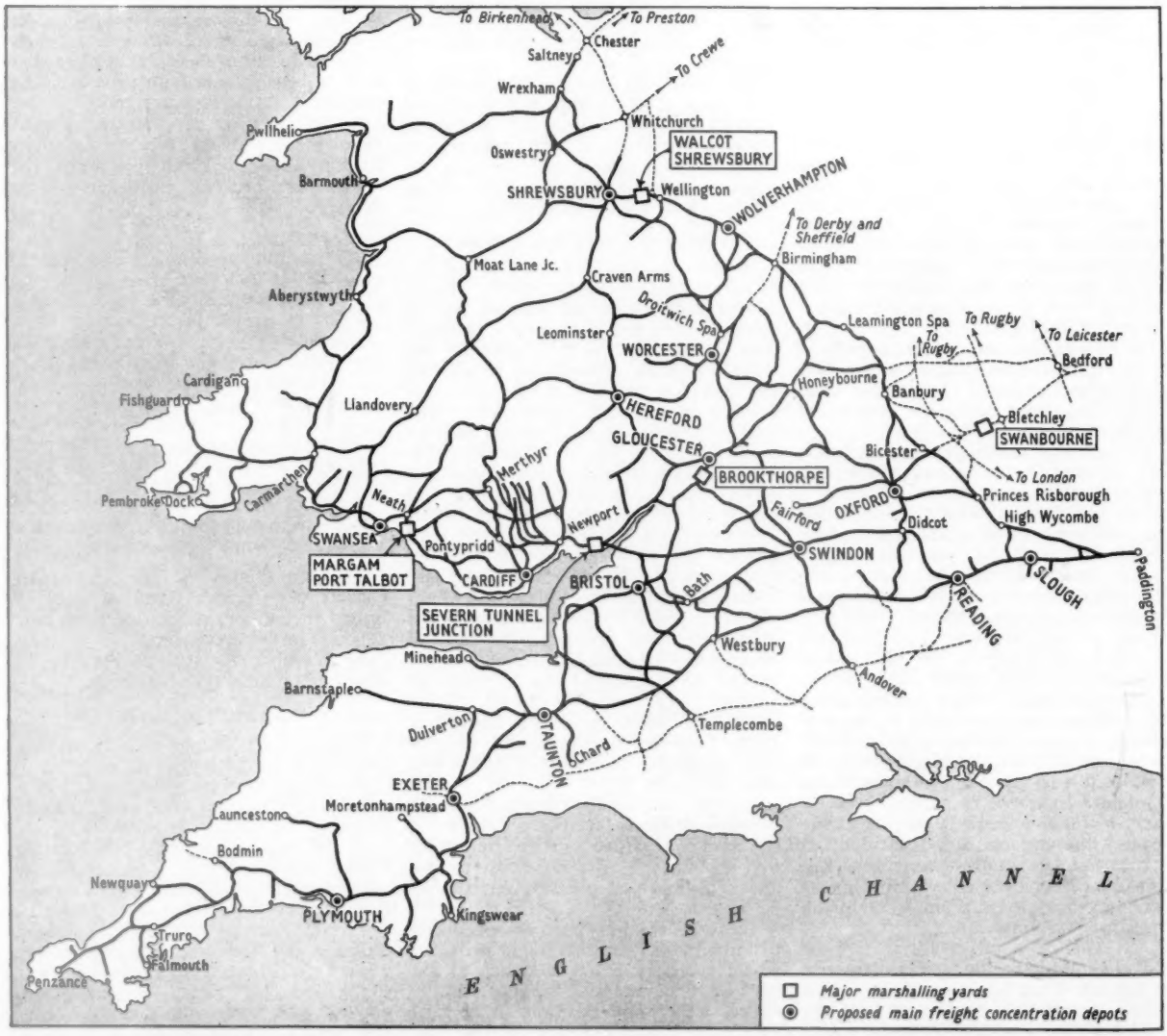
The Western Region plans to have four major marshalling yards, as under:—

Margam (Port Talbot)
Severn Tunnel Junction
Brookthorpe (Gloucester)
Walcot (Shrewsbury)

The London Midland Region is taking the initiative in building a yard at Swanbourne (Bletchley) which will form an integral part of the Western Region scheme.

These yards will be described in greater detail in subsequent issues, but their function in the overall regional pattern can be briefly described.

Margam is situated at the east end of the Swansea District. At present, traffic for this district is formed into trains calling at a number of small yards. In future, it will be sent through to Margam for sorting and distribution. The yard also serves as a collecting point for traffic for the works at Margam and Port Talbot, of the Steel Company of Wales Limited. These are in close proximity to this yard. It is a two-way yard which can



Map of Western Region, showing sites of major marshalling yards and of proposed main freight concentration depots

handle the traffic forwarded from local works in easterly or westerly directions.

Severn Tunnel Junction is at the east end of the Newport and Cardiff Districts and serves as a collecting and distribution centre for traffic to and from London, the South, and South-West of England.

Brookthorpe is situated at the junction of the lines from South Wales and South-West England in one direction and the Midlands and Black Country in the other It is designed to collect and distribute traffic in these directions. Besides eliminating smaller yards in Gloucester, Bristol, Monmouthshire, and Birmingham, it will handle through trains to and from the London Midland Region conveying traffic at present exchanged at the Birmingham junctions.

Walcot is a correlative yard to Brookthorpe at the north end of the Black Country. It is at the junction of the lines from South Wales and Wolverhampton in one direction and Chester, Crewe, and Stafford in the other. It will serve as the collecting and distributing yard for traffic between the Western Region and Lancashire, Yorkshire, the North East Coast, and Scotland.

Swanbourne, which is in the London Midland Region, will deal with traffic passing between the Midlands, the London District of the Western Region and the Southern Region, still further reducing the present junction exchanges in the Birmingham district between the London Midland and Western Regions and eliminating working through the congested lines in the London area.

As the concentration depots are complete, it is intended to operate fully vacuum-fitted trains between them at the highest speed at which the wagons will run (58 m.p.h.). For the most part, these trains will be formed in marshalling yards as near as practicable to the concentration depots and will convey private siding traffic as well as that loaded in the depot itself.

Where there is insufficient traffic to justify through trains from one depot to another, the trains will convey traffic for two or more depots which will be detached intermediately. By this means, it should be possible to ensure that traffic for long-distance destinations is given a rapid and reliable service.

Vacuum Brakes

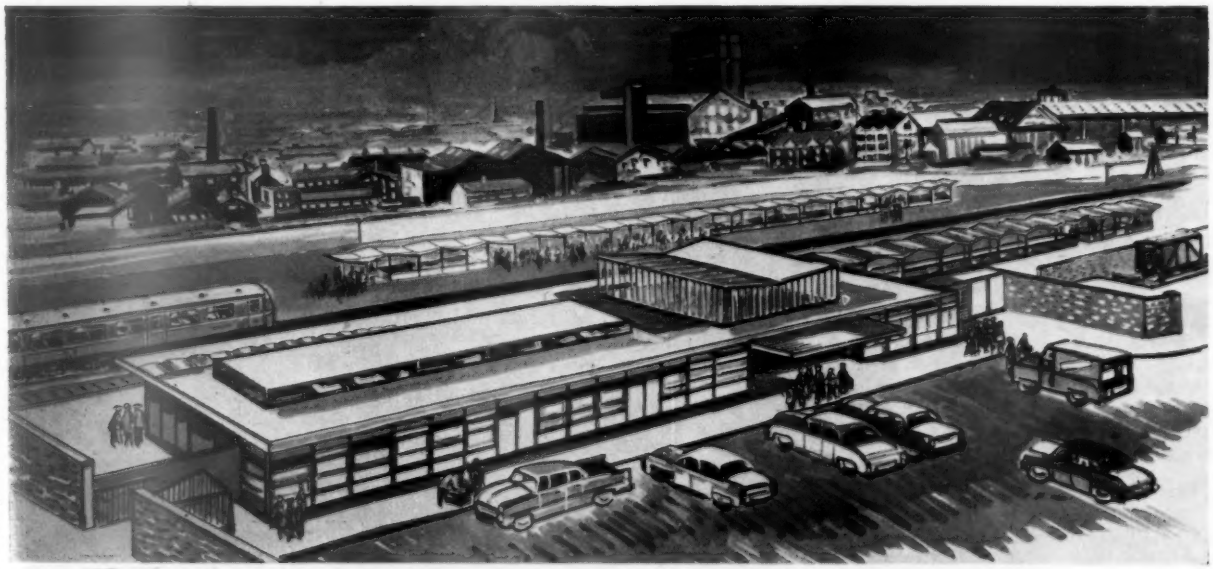
Trains conveying the heavier Type (2) traffic will also be fully fitted with the vacuum brake, but will run at lower speeds (35-40 m.p.h.) to ensure a satisfactory train-load. These trains will run mainly from one large marshalling yard to another in rough formation so that they can be despatched from the originating yard as quickly as possible after sufficient wagons have been collected. Where the volume of traffic is sufficient, they will operate as through trains to the consignee's siding.

These trains will supplement the faster trains and no doubt also will be required to convey Type (1) traffic where this passes in such small quantities as not to justify the operation of a train on its own.

The fast trains should run with the same regularity as the passenger service, but the number of the heavier trains must of necessity vary from day to day according to the fluctuations of demand. It will be necessary to operate an agreed minimum number to maintain the regularity of service which must be upheld.

It will be possible to set out in a timetable these trains which, together with the faster trains, will form the basic service for general freight and coal traffic. This timetable would be published both to railway commercial staff and traders generally so that everyone concerned in the matter could have knowledge of the service available.

St. Helens Shaw Street Station



THE reconstruction of St. Helens Shaw Street Station has been begun by the London Midland Region of British Railways. The work should be completed early in 1961.

The station has been designed under the direction of the Region's Chief Civil Engineer, Mr. A. N. Butland. Special use will be made of glass in various forms in acknowledgement of the major local industry.

The whole of the main building will be clad in glass, and grey and red armour-plated glass will be used for the lower parts of the wall panelling. The central hall will be clad with heat-resistant glass.

The ticket office will be completely glazed above counter level, and part of its interior will be lined with vitrolite glass. Tickets will be stored in pressed metal racks.

All glass used will be produced in St. Helens by Pilkington Bros. Ltd.

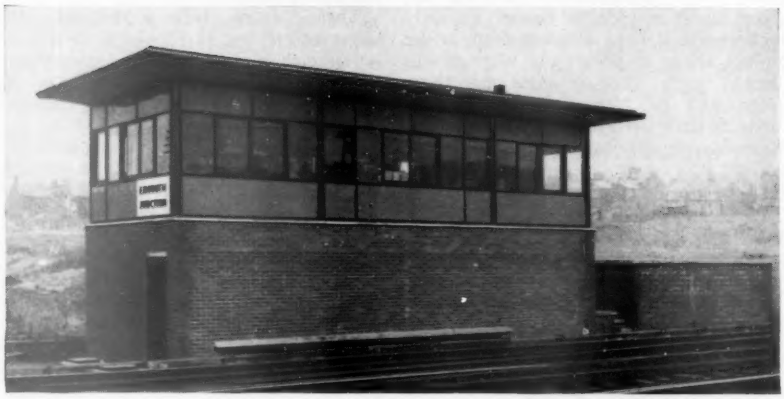
Island canopies will be of steel and timber in natural finish, and lighting will be by electric fluorescence. The main building will be centrally heated, and the separate waiting rooms on the platforms will be heated by electric convectors. A new stairway will descend from the roadbridge beside the station, and the forecourt with its tarmac surface will provide a car park. All platforms will be re-surfaced, and the subway renovated and re-lit.

Because the site is covered to a depth of 10 or 11 ft. with industrial chemical waste with a very high sulphate content, the new station will be built on a raft of corrosion-resistant concrete supported on piles driven into the underlying clay.

Cost will be over £70,000.

New Signalbox at Exmouth Junction, Southern Region

Equipped with interlocking block and track-circuit controls, the new box is typical of work in hand under a renewals programme



New signalbox at Exmouth Junction, in fork between Salisbury–Exeter main line and Exmouth branch

IN the Southern Region of British Railways many signalboxes which date from the days of the pre-grouping companies contain lever frames and other equipment of the types favoured by them. A maintenance renewal programme has had to be put in hand to replace these boxes with apparatus conforming to present-day methods and requirements.

A typical example of such work is seen in the new signalbox opened on November 15, 1959, at Exmouth Junction, where the line to Topsham, Exmouth, and Budleigh Salterton leaves the main Salisbury-Exeter line, to rejoin it at Sidmouth Junction. Besides dealing with both main and branch line trains the new box, situated in the fork of the junction, controls also the entrance to the locomotive depot, the Chief Civil Engineer's pre-cast concrete depot, and the sidings on each side of the line.

The old box, which contained a 49-lever Stevens type locking frame, as widely used by the former London & South Western Railway, and had been enlarged twice, stood where it would have blocked access to the proposed new carriage sheds from both main and branch lines.

Re-signalling with Three-position Block

The train signalling between Exeter and Pinhoe on the main, and Topsham on the branch, line was controlled by Sykes's lock-and-block. This has given place to three-position block with modern standard British Railways controls, using the Southern Region's own type of instrument. With this, as seen in one of the accompanying illustrations, the block indicators for the sections in advance can be turned to face the train-booking desk. Running signals are upper quadrant semaphores, with a route indicator for movements from the up main line to the sidings on that side; the distant signal from Exeter is power operated.

The box was designed in the Architect's office in the Chief Civil Engineer's department at Waterloo and built by that engineer's district staff. The basic structure is of load-carrying cavity brickwork with reinforced concrete floors on steel frame supports. Lightweight steel sections form the roof frame, carrying an aluminium deck sheet with an insulated and felt finish.

The decking is cantilevered out to form a canopy and give some protection against sun glare and minimise the obscuring effect of driving rain on the windows.

A portion of the cabin wall is prefabricated with teak framing incorporating the sliding windows and panels below cill level. These have an external face of coloured vitreous enamelled steel sheets on Asbestolux backing, plastic faced plywood internally and glassfibre insulation included between the two faces. This finish facilitates cleaning and will reduce maintenance costs. Asbestos fibre tile ceiling provides acoustical correction on the operating floor.

Lighting fittings are recessed into the ceiling panels and dimmer switches enable the signalman to adjust lighting intensity to his own requirements. There is central heating from a solid fuel boiler and the signalman's cooking and washing facilities are in keeping with modern standards; the flush lavatory is at lever frame level.

Lever Frame and Track Diagrams

The box contains a 64-lever Westinghouse style "A3" lever frame, with catch-handle locking actuation, and "L" type lever locks and circuit controllers; this number of levers provides for the introduction later of local diesel unit services in the East Devon area, the servicing depot for which will be at Exmouth Junction. There are 13 track circuits indicated on duplicate illuminated diagrams; occupancy of a section is shown by a red oval sign housing two telephone type S.L.30 lamps. A "power off" indicator also is provided.

Relay Room

The relay room is in the basement and houses also the cable terminations and rectifiers for charging the central Nife type batteries; there is also a deep sink with water supply for washing primary cells housed in the basement. Points and point locks, etc., are operated through standard B.R. galvanised channel rodding with steel bushed grease lubricated cranks throughout the outside connections.

The signalling scheme was designed and the signalling apparatus installed by the staff of the Signal Engineer at Wimbledon.

Lever frame, illuminated diagrams, and block instruments with advance indicators set to face train-booking desk

RAILWAY NEWS SECTION

PERSONAL

The appointment of Sir Ralf Emerson, Chairman of the Nigerian Railway Corporation, is to terminate on May 31. The Council of Ministers in Nigeria has decided that it is appropriate, in view of the approach of independence next October, for a Nigerian to be appointed.

Mr. P. T. Heady, who, as recorded in our February 26 issue, has completed his term of office on the Western Area Board, British Transport Commission, began his career with the London North Western Railway and served at Dunstable, Thrapston, Coventry, and Rugby, D.G.M.O. He then joined the Railway Clerks' Association as Personal Clerk to the General Secretary, later becoming Chief Clerk & Accountant. In February, 1924, he was appointed Divisional Secretary of the Association with an office in Birmingham, in which position he was responsible for direct negotiations with L.M.S. Chief Staff Officers on matters affecting R.C.A. members employed in Areas 1 and 2 (Crewe to Euston and branches, Derby to St. Pancras and branches, and Wales and Ireland). He was also R.C.A. negotiator for the Cheshire Lines, and Mersey Railway, the Manchester Ship Canal and other small undertakings. On August 1, 1935, he became Secretary to the Staff Side of L.M.S. Sectional Council No. 1, which at that time dealt with classification and other matters affecting salaried grades in England, Scotland, Ireland and Wales. He also undertook responsibility for all direct negotiations with L.M.S. Chief Staff Officers for all areas except Scotland. During the 16½ years from February, 1924, to September 1, 1940, he had many contacts with railway officers at all levels and in all departments and became acquainted with the duties and problems of all sections of the railway salaried grades. Mr. Heady was appointed Senior Assistant Secretary at R.C.A. headquarters in 1940, and Assistant General Secretary on June 1, 1945, and, from February 1, 1948, until his retirement on September 1, 1949, he acted as General Secretary. He was appointed a Member of the London Midland Area Board, in August, 1955, and was transferred to the Western Area Board in October, 1956.

Mr. P. T. Heady
Member, Western Area Board, P.T.C., 1956-60

Mr. Percy Morris
Appointed Member, Western Area Board, B.T.C.

B.T.C. Area Boards

The following changes in the London, Midland and Eastern Area Boards, B.T.C., which have already been recorded, took place on March 15:

Lord Rusholme relinquished the Chairmanship of the London Midland Area Board but remains a Member of the Board; Sir Reginald Wilson became Chairman of the London Midland Area Board, and relinquished the Chairmanship of the Eastern Area Board; Major-General G. N. Russell became Chairman of the Eastern Area Board and ceased to be a member of the London Midland Area Board.

Mr. Guido C. Belzoni and Mr. Augusto M. Cadot have resigned from their appointments as Government Delegate and Administrator General respectively of the Argentine State Railways (E.F.E.A.). Mr. Constantino Plaghos, formerly Chief of the Traffic Department, has been appointed Acting Government Delegate and Acting Administrator General.

Mr. Percy Morris, J.P., who, as recorded in our February 26 issue, has been appointed a Member of the Western Area Board, British Transport Commission, joined the Great Western Railway as a telegraph clerk at Swansea, in 1908, and held various clerical appointments in South Wales. During the 1939–45 war Mr. Morris was Deputy Railway Commissioner for Civil Defence for Wales. He retired from railway service in 1945. He was for over 40 years an active member of the Railway Clerks' Association, subsequently the Transport Salaried Staff Association. He became a Member of the first Sectional Council No. 1, and represented South Wales on that body for several years, and for 10 years was National President, T.S.S.A. He was also a staff contributors' representative on the Great Western Railway Superannuation Fund and a founder member of the G.W.R. Widows' & Orphans' Fund. Until recently he was Member of Parliament for Swansea West, which he represented for 14 years. Mr. Morris has been a member of Swansea County Borough Council for 33 years; was Mayor in 1955–56, and is an Honorary Freeman of the Borough. He was made a Justice of the Peace in 1939. He is also a member of the Council of the Swansea University College.

Mr. F. J. Pepper

Appointed Mechanical Engineer (General), B.T.C. Headquarters

Mr. M. S. Hatchell

Appointed Mechanical & Electrical Engineer (Workshops), Southern Region

Mr. E. J. Stephens

Traffic Manager, Doncaster, Eastern Region, 1957-60

Mr. F. J. Pepper, M.I.Loco.E., Carriage & Wagon Engineer, Southern Region, British Railways, who, as, recorded in our February 12 issue, has been appointed Mechanical Engineer (General), British Transport Commission Headquarters, began his railway career with the Midland Railway in 1919 as a Privileged Apprentice in the Locomotive Works. From 1925 to 1930, Mr. Pepper was engaged on outside inspection of locomotive building on contract. Subsequently he served in the Drawing Office at Derby, transferring to the Experimental Section in 1933. In 1939 he was placed in charge of tank production work at Crewe. For a period in 1947 Mr. Pepper was attached to the War Department as an instructor in tank management and maintenance. In the same year he became Works Manager, Kilmarnock, and, in 1947, Outdoor Carriage & Wagon Assistant to the Mechanical & Electrical Engineer (Scotland), L.M.S.R., Glasgow. On nationalisation he was appointed Outdoor Superintendent, Carriage & Wagon Engineering Department, Glasgow, Scottish Region, British Railways, and, from October, 1950, to June, 1951, was Acting Carriage & Wagon Engineer, Scottish Region. In July, 1951, he was appointed Executive Officer, Wagons, at the Railway Executive. He was appointed Assistant Carriage & Wagon Engineer, Southern Region in February, 1955, and Carriage & Wagon Engineer in October the following year.

Sir Arthur Elton, has been appointed Controller of the Central Information Department, Associated Electrical Industries Limited.

Mr. R. A. McNeile, Managing Director, Arthur Guinness Son & Co. (Park Royal) Ltd., has been elected President of the Mansion House Association on Transport. He succeeds Mr. M. F. Barnard who has served as Chairman of Council and President for a number of years. Mr. A. J. Malacrida, Secretary, retires at the end of March. Mr. H. Tudor Williams will act as Hon. Secretary of the Association.

Mr. T. C. Johnston, formerly General Manager, Metropolitan Electric Cables & Construction Co. Ltd., has joined British Insulated Callender's Cables Limited as Regional Manager (Eastern Region).

Mr. M. S. Hatchell, M.I.Mech.E., M.I.Loco.E., Mechanical & Electrical Engineer, Scottish Region, British Railways, who, as recorded in our February 12 issue, has been appointed Mechanical & Electrical Engineer (Workshops), Southern Region, was educated at Haileybury College and began his engineering career as a pupil at Brighton Locomotive Works in 1920. After a period on inspection duties, he was appointed Assistant to the Works Manager at Eastleigh Locomotive Works. In 1938 Mr. Hatchell was transferred to Ashford (Kent) as Assistant Works Manager and in 1941 became Carriage & Wagon Works Manager, Eastleigh. A year later he was promoted to be Works Manager, Ashford. In 1946 he became Assistant to the Chief Mechanical Engineer, Southern Railway and in 1948 was transferred to Derby as Principal Assistant (Locomotives) to the Chief Mechanical Engineer, London Midland Region. After nearly five years at Derby Mr. Hatchell was appointed Mechanical & Electrical Engineer, Scottish Region. In his new appointment Mr. Hatchell will be directly responsible for the construction and major overhaul of all locomotives, carriages and wagons.

Mr. S. A. Fitch has been appointed a Director of Aldershot & District Traction Co. Ltd., on the resignation from the board of Mr. W. H. F. Mepsted with effect from March 31.

Institution of Railway Signal Engineers

The following names have been entered on, or transferred in, the register of members of the Institution of Railway Signal Engineers

Members

Mr. Y. Paris, Chef du Service, Forges et Ateliers de Constructions Electriques de Jeumont, La Plaine St. Denis (Seine).

Mr. R. J. Pedoussant, Directeur Ingénieur-Conseil de Signalisation, Forges et Ateliers de Constructions Electriques de Jeumont, Paris.

Transfer from Associate Member to Member

Mr. H. L. F. Tuff, Assistant Signal Engineer (Modernisation), Eastern Region, British Railways.

Associate

Mr. A. A. W. Barnes, Technical Representative & Manager, Telegraph Construction & Maintenance Co. Ltd.

Mr. E. J. Stephens, Traffic Manager, Doncaster, Eastern Region, British Railways, who, as recorded in our February 12 issue, retires on April 5, was educated at Hereford, University College of Wales, Aberystwyth, and Lincoln College, Oxford. He joined the Royal Horse Artillery in the 1914-18 war, and was commissioned in the Special Reserve of the Royal Horse & Field Artillery. He was on active service with the 53rd Welsh Division in Palestine and Egypt. In 1922, Mr. Stephens joined the former North Eastern Railway as a Traffic Apprentice in the Chief Goods Manager's Office at York. After a period of training he became Assistant Yardmaster at Doncaster in 1926. He later served as Yardmaster, Wath; Assistant District Operating Superintendent, Doncaster, and District Superintendent, Lincoln. In 1943 he was appointed District Operating Superintendent, Doncaster. Mr. Stephens became Traffic Manager, Doncaster, in December, 1957, on the setting up of the new traffic organisation in the Eastern Region.

We regret to record the death on March 6, at the age of 49, of Mr. H. F. Merrett, Assistant District Commercial Manager, Newport, Western Region, British Railways. He started his railway career in 1925 and held various appointments in the Midlands. He later became Stationmaster, Pontypridd.

Mr. Peter Wrightson, Managing Director, Head Wrightson & Co. Ltd. has been appointed Vice-Chairman & Managing Director.

Mr. Walter P. Yaneske, Chief Engineer of Toledo Woodhead Springs Limited, has been appointed to the board as Technical Director.

Institution of Civil Engineers

The following names have been entered on, or transferred in, the register of the Institution of Civil Engineers:

Member

Mr. D. H. Coombs, Assistant Engineer (Permanent Way), Chief Civil Engineers Department, Scottish Region, British Railways.

Associate Members

Mr. J. M. Holmes, Ministry of Works & Transport, Ibadan, Nigeria.

Mr. S. Nadarajah, Divisional Engineer's Department, Ipoh, Perak, Malayan Railway.

Mr. W. A. Anderson

Secretary, New South Wales Government Railways, 1951-60

Mr. W. A. Anderson, Secretary, New South Wales Government Railway, who, as recently recorded, has retired, entered the New South Wales Department of Railways as a junior clerk in 1913. He was on active service from September, 1915, to June, 1919. Mr. Anderson was appointed Information Officer for the department in 1936. Subsequent positions held by him include Information & Finance Officer, Public Relations Officer, Administrative Assistant, and Assistant Secretary. He was appointed Secretary, New South Wales Government Railways in 1951.

THE LATE MR. L. EDWARDS

The funeral service to the late Mr. Leslie Edwards, Divisional Traffic Manager, Bristol, Western Region, British Railways, took place at St. Luke's Church, Brislington, Bristol, on March 7. It was attended by over 400 past and present railwaymen. In addition to family mourners, the following were among those present:

British Transport Commission

Mr. K. W. C. Grand, Member, B.T.C., and former General Manager Western Region, British Railways; Mr. M. A. Cameron, Principal Officer (Administration); Mr. T. H. Hollingsworth, Traffic Adviser; Mr. A. E. Flaxman, Chief Freight Officer; Mr. E. J. Vipond, Chief Operating Officer.

Western Area Board, B.T.C.

Mr. F. A. Parish, Member (also representing Mr. R. F. Hanks, Chairman).

Western Region, British Railways

Mr. H. G. Bowles, Assistant General Manager (also representing Mr. J. R. Hammond, General Manager); and Messrs. A. C. B. Pickford, Assistant General Manager (Traffic); S. G. Ward, Regional Establishment & Staff Officer; C. W. Powell, Operating Officer; H. E. A. White, Running & Maintenance Officer; C. J. Rider, Public Relations & Publicity Officer; A. W. J. Dymond, Supplies & Contracts Manager; A. A. A. Cardani, Signal Engineer; H. C. Craddock, Outdoor Assistant (Carriage & Wagon) (also representing Mr. R. A. Smeddle, Chief Mechanical & Electrical Engineer); R. G. Henbest, Estate & Rating Surveyor; J. D. Swain, Regional Treasurer; L. S. Camp, Assistant to Regional Accountant (also representing Mr. J. W. J. Webb, Regional Accountant); F. E. Phasey, Traffic Assistant to Commercial Officer; J. Taylor, Staff Assistant to Operating Officer (also representing Mr. S. G. Hearn, Assistant General Manager (Traffic), Eastern Region); G. A. V. Phillips (London), W. R. Stevens (Cardiff) and R. C. Hilton (Birmingham), Divisional Traffic Managers; N. H. Briant, Divisional Operating Officer, London; H. Wedmore (also representing Mr. H. R. Chubb, Regional Welfare Officer).

Western Division: Messrs. H. E. Hallett, Operating Officer (also representing Mr. L. W. Ibbotson, Assistant General Manager (Modernisation)); N. S. Taylor, Commercial Officer; D. C. I. Reynolds, Running & Maintenance Officer; G. R. Burt, Development Assistant; C. L. Newbury, Staff Assistant; L. J. Bracey, Assistant—Traffic; H. E. R. Bastin (Bristol) and W. J. Hartnell (Exeter), District Traffic Superintendents; R. M. Taylor (also representing Mr. F. G. Dean, District Traffic Superintendent, Plymouth), T. R. Hall, District Running & Maintenance Officer (Newton Abbot); H. G. Lakeman (Bristol) (also representing Mr. M. G. R. Smith, Chief Civil Engineer); N. S. Cox (Plymouth) and H. L. Douglas (Taunton), District Engineers; I. M. Loder, District Operating Officer; H. Bunting (Bristol) and D. H. Hawkeswood (Exeter), District Commercial Officers; J. H. A. Owen, District Road Motor Engineer; P. C. Kirwin, Goods Agent, Bristol; T. Richards, D.T.S.O.; R. T. Thick, District Publicity Representative; Miss M. D. Richards, Secretary; Messrs. D. Wilkins, Chauffeur; A. E. Griffiths, Chief Controller; R. Titball, Editor, *Western Division News*; S. Cotterill, Chief District Inspector; L. C. Davis, Parcels Agent, Bristol; J. H. Wells, District Ambulance Secretary; H. A. Webster and E. Woolway (representing Bristol Branch Staff Association).

Messrs. J. H. F. Page, District Traffic Superintendent, Cardiff; J. H. G. Russell, Development Assistant, Cardiff; D. S. Hart, Operating Officer, Birmingham.

Stationmasters: Messrs. C. R. Rust, Bristol (Temple Meads); A. E. Stowe, Bath Spa; J. F. Snow, Reading; A. E. Pallett, Paignton; G. L. Richings, Weston-super-Mare; J. H. Jenkins, Bristol (Stapleton Road), L. E. Hole, Yeovil (S.R.); C. R. Boundy, Barnstaple (S.R.); R. W. Thomas, Yardmaster, Avonmouth Dock.

B.T.C. Police

Messrs. W. W. Wood, Chief of Police, Western Area; H. A. Roper, Superintendent, Bristol.

Other Regions and Undertakings

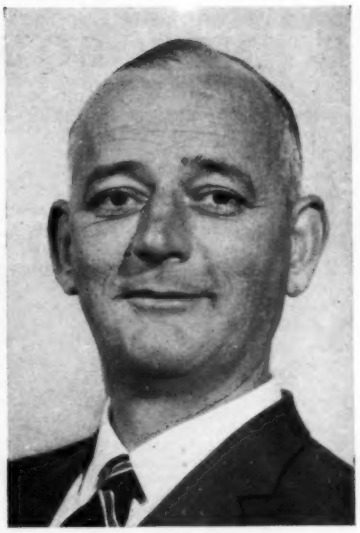
Mr. David Blee, General Manager, London Midland Region; Mr. A. Earle Edwards, Operating Officer, Southern Region; Messrs. J. H. Knight; R. Lyall Keene, Secretary, Bristol Chamber of Commerce; I. R. Patey, General Manager, Bristol Omnibus Co. Ltd.; F. D. Arney, General Manager, Port of Bristol Authority; Superintendent W. Whalley, representing the Chief Constable, Mr. Norman Frost; Colonel T. F. Hood; Messrs. R. V. Cole, District Manager, British Road Services; H. R. Priday, Secretary, Bristol & Bath Productivity Association. Messrs. Neill Whitfield, Director & General Manager, Bristol Steam Navigation Co. Ltd.; J. Hartley Hodder, James & Hodder Limited; G. R. Grundy, Provident Mutual Life Assurance Association, and Llewellyn Ward.

Former Officers

Messrs. Gilbert Matthews; H. H. Swift; H. J. Peacock; R. H. B. Nicholls; C. E. Shaw; H. T. G. Miller and J. F. Cole.

Mr. Roberto J. Monteverde has been appointed Technical Manager of Buenos Aires Transport.

Mr. Luis Falcone, Chief Engineer, Signalling, Chilean State Railways, is making a brief business visit to the United Kingdom this week. Reference to his tour is made elsewhere in this issue.



Mr. D. H. Watson

Appointed Secretary, New South Wales Government Railways

Mr. David Henry Watson, Assistant Secretary for Railways, New South Wales Government Railways, who, as recently recorded, has been appointed Secretary for Railways, joined the Department of Railways as Senior Legal Officer in the Legal & Estates Branch in November, 1951, and was appointed Principal Legal Officer in January, 1952. The following year he was elected to the office of Assistant Solicitor for Railways, a position he held until transferred to the Secretariat as Assistant Secretary for Railways in April, 1957.

Mr. H. H. Dinsmore, former Transport Superintendent, Commissioner's Office, Brisbane, Queensland Government Railways, has been appointed General Manager, South Western Division, Toowoomba, in place of Mr. W. J. McCormack.

The Council of the Institution of Railway Signal Engineers has elected Mr. J. H. Fraser (Past-President), formerly Chief Signal Engineer, British Transport Commission, as an Honorary Member as a mark of appreciation of the service he has rendered to the Institution and to the profession over a period of many years.

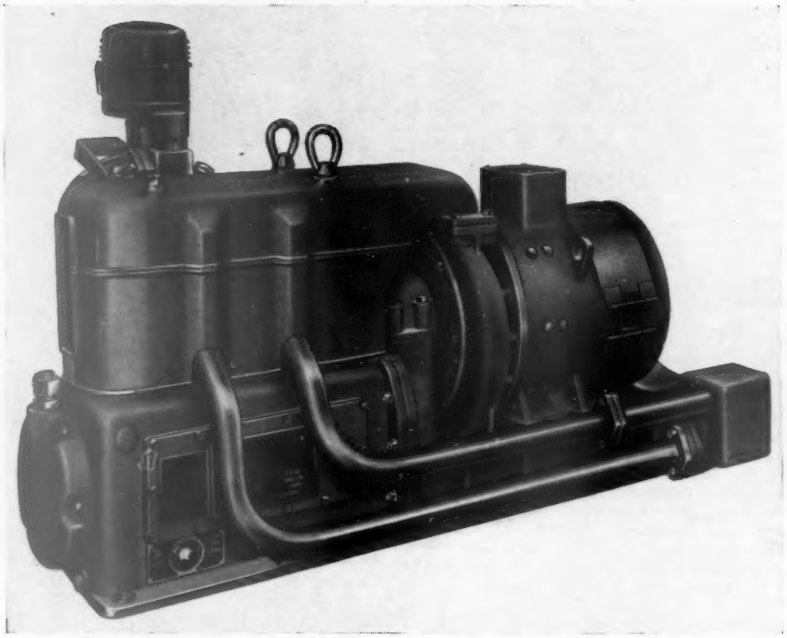
Sir Alexander Fleck has been appointed President of the Society of Chemical Industry for 1960-61, in succession to Mr. E. J. Solvay.

We regret to record the death on March 5, at the age of 75, of Mr. Oscar Rendell, a Director of H. W. Kearns & Co. Ltd., since 1927. He had been with the company for more than 51 years.

Mr. C. Garstang, Chief Assistant General Manager of Thos. Cook & Son, Limited, has been elected Chairman of the Association of British Travel Agents for 1960–61. Mr. R. R. May, Managing Director of Poly Travel Limited has been elected Vice-Chairman.

A memorial service for Mr. Herbert John Stone, Director & General Manager, British Insulated Callender's Cables Limited, was held on March 10 at St. Mary-le-Strand, London. The Rev. Bertram Chambers officiated and the address was given by Mr. W. H. McFadzean, Chairman & Managing Director of B.I.C.C.

NEW EQUIPMENT AND PROCESSES



Air-Brake Compressor

THE Metcalfe-Oerlikon three-cylinder two-stage motor-driven compressor with built-in intercooler is designed for rail traction duty for which it is available in four sizes.

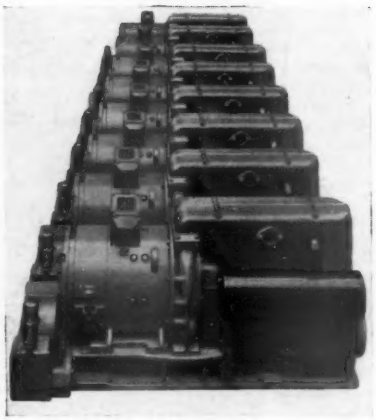
Model 2A115 has a delivery of 30 cu. ft. per min. and a delivery pressure of up to 140 lb. per sq. in. This is suitable for locomotives fitted with air brakes and controlling vacuum-braked stock, railcars with automatic air brakes, and locomotives with automatic air brakes and handling limited numbers of air-braked stock.

The motor with cooling fan, is flange-mounted on the reduction gearcase. Underneath is the intercooler which also forms the motor bedplate to enable the complete assembly to be a neat compact unit suitable for floor-mounting inside the locomotive.

The crankshaft is carried in two roller bearings, and babbit-lined shells are used for the connecting rod big ends. These are pressure lubricated and the rods are drilled for pressure lubrication of the gudgeon-pin bushes. Each cylinder is spigot mounted and clamped to the crankcase by studs which extend from the crankcase to the cylinder head. A single-piece casting is used for the head, covering the three cylinder bores. The aluminium-alloy pistons are tin-plated to reduce the running-in period.

Spigotted in the top end of each cylinder is a valve cage containing the suction and delivery valves, the upper and lower faces of the cage forming the seal between the cylinder and cylinder head. The spring-loaded plate valves are arranged concentrically, with the delivery valve in the centre and the suction valve on the outside. This facilitates servicing as the complete assembly of valves and valve seats can be removed readily for bench overhaul and testing.

An efficient cooling system is incorporated with a single-centrifugal fan mounted on the motor shaft to provide cooling air for the motor, compressor, and intercooler. The suction side of the fan draws air through the motor and part of the fan delivery is directed through the intercooler; the remainder is passed through the cowling which encloses the cylinders and cylinder head.



The air delivery from the two low-pressure cylinders passes through tubes in the intercooler and then to the high-pressure cylinder. Any moisture in the air is deposited in a trap on the intercooler and drained off periodically. There is an oil-wetted air filter on the suction side of the compressor.

The Crompton-Parkinson motor runs at 2,900 r.p.m., driving through a pair of reduction gears to give a speed of 1,000 r.p.m. on the compressor crankshaft. Oil-bath lubrication for the gears is supplied from the oil sump in the crankcase and there are sight level glasses at each side.

Automatic operation of the compressor to maintain the required reservoir pressure is controlled by a governor switch on the main reservoir. The driving motor has a continuous rating of 3,000 r.p.m., 74 A. 110 V. At the output pinion end the armature shaft is supported in a heavy-duty roller bearing. The compressor, complete with motor, weighs 880 lb.

Further details may be obtained from Davies and Metcalfe Limited, Romiley, near Stockport, which manufactures under licence a complete range of Oerlikon brake equipment.

Transistorised Carrier System

THE SCT-12 two-wire carrier-on-cable telephone system has been designed to provide 12 two-way high-quality circuits of 300–3,400 cycles per sec. with extremely low power consumption combined with compact mechanical layout resulting from the use of junction-type transistors throughout.

The equipment is intended for use where a limited number of circuits is required without the expense of providing separate go and return cables, and may be applied to deloaded pairs in existing audio cables, to interstice pairs in coaxial cables, or to new balanced pair cables. It is designed for use with a mean repeater section attenuation of up to 56 db (maximum for any one section 61 db) measured at 108 kc. per sec.

Special features include wide-band telephone circuits, in-built carrier supplies, and automatic gain regulation. One rackside mounts two terminals complete with terminations and ringdown relays.

Further details may be obtained from Standard Telephones & Cables Limited, Transmission Systems Division, North Woolwich, London, E.16.

Industrial Pocket Microscope

THE "Elliscope" is a high-power pocket microscope with optically-worked lenses and a magnifying power of from 20 to 40 times. The mirror which is fitted to its base can be turned toward a light source to reflect light on the subject under examination. Magnification can be increased by extending a sliding tube, and focusing is achieved by adjusting a knurled ring. Circle of field is approximately ½ in.

Size of the instrument is little more than that of the average pen. Cost is 45s.

Further details can be obtained from the manufacturer, the Ellis Optical Company, Mayday Road, Thornton Heath, Surrey.

Eastern Region Modernisation at Barnsley

Closure of Barnsley Court House Station and construction of new junction and signalbox

British Railways, Eastern Region, has announced that a scheme of improvements is now being carried out at Barnsley. Barnsley Court House Station is to be closed, a new junction and signalbox is to be put in operation at Quarry Junction, Barnsley Exchange Station is to be modernised, and improved local train and passenger facilities provided.

Most of the work will be completed by April when, for the first time, through diesel services will be introduced from Sheffield to Wakefield and Leeds via Barnsley Exchange Station. The present services operate between Sheffield Midland and Barnsley Court House Station and between Barnsley Exchange Station and Leeds.

The new through services will eliminate the inter-station transfer between Barnsley Court House and Barnsley Exchange and will reduce the overall journey time of diesel trains between Sheffield and Leeds by way of the Barnsley route.

Closure of Barnsley Court House

Because the local service between Doncaster and Penistone was withdrawn, last June, Barnsley Court House Station has only been required for the passenger service from Sheffield Midland. The Chief Civil Engineer of the Eastern Region was faced with the problem of urgent renewal work at Court House, the cost of which was estimated at £200,000. By far the greater part of this sum was required for new steelwork below the eastern approaches to the station and for the construction of an underbridge. In view of the limited use of Court House it was decided to close the station altogether and to carry out the scheme outlined above. For all its advantages, the new project will cost less than half the amount needed for the necessary renewal work at Court House.

The work is being undertaken in three stages, the first being to raise the former Great Central Line at the southern end of the section concerned, near the bridge which carries the former Midland Line over it. This entailed removing a road bridge, which has been replaced by a new footbridge on a higher level.

New Connection at Quarry Junction

A feature of the second stage of the work will be the laying-in of a new connection at Quarry Junction between the Midland and Great Central Lines. This will entail the removal of the bridge which at present carries the Midland Line over the Great Central Line. It involves substantial earthworks to permit the linking of the two lines at this point. This stage of the work will require full possession of the lines by the District Engineer during the Easter weekend.

The last stage of the work at Quarry Junction comes with the further raising of the track on the former Great Central Line to its final level. In all, a ¾-mile stretch of track will be built up by as much as 14 ft. in some places, and permanent way men are using approximately 150 wagons of ballast for the job each week. To allow the movement of rail traffic to continue, the line is being raised 1 ft. at a time.

Replacement of Signalboxes

The repositioning of the lines will make it necessary to take down the existing Quarry Junction signalbox, and a new one is being constructed on the site of the former connection between the G.C. and Midland Lines. The scheme also means that Barnsley Goods, Barnsley Court House, and Barnsley West signalboxes will become obsolete.

At Barnsley Exchange Station a footbridge and sleeper crossing to the new up platform will be constructed, part of which will be on the site of the former motive power depot which was closed recently. The down platform will be lengthened slightly and two goods yard sidings shortened. A new waiting shelter will also be built on the up platform.

Other improvements at Barnsley Exchange include the construction of a new parcels office, modernisation of the ticket office, additional staff accommodation, and the reconditioning of the station waiting-rooms. Electric lighting will also be installed. The Sheffield to Leeds service will begin to run into Exchange Station after completion of the new junction over the Easter weekend.

Institution of Railway Signal Engineers

Train describers in British Railways, Western Region

At a recent meeting of the Institution of Railway Signal Engineers, Mr. M. E. Leach (Member), Assistant Signal Engineer, British Railways, Western Region, read a paper entitled "Modern Developments in Train Describer Technique" which dealt with the system recently evolved in the Region.

Central signalboxes, he pointed out, occurred at main interlocking centres, with long stretches of intervening automatically signalled territory; subsidiary intermediate lockings were remotely controlled or relegated to ground frame status according to their importance. As an example of such a layout he cited the adjacent central boxes to be provided at Slough and Reading, Western Region. These would be separated by 18 route miles of quadruple track, and the box at Reading would control over 120 track-miles, with some 179 absolute, and 21 permissive, running signal sections.

Western Region Miniature Control Panel

The Western Region had adopted a miniature control panel of the combined diagram and operating console type as the standard for major signalling schemes, and had developed, as part of the system, a train describer with signal berth display and "walking" or progressing description facilities.

Early in the development it was apparent that, although it was desirable to incorporate the display units in the control desk proper, this, at the present stage of availability of miniature display equipment, would have resulted in an increase in size of the control desk incompatible with Regional ideas of miniaturised panel technique.

The number of additional visuals and pushbuttons required for train describer purposes would also have complicated unduly the face presentation of the console, leading to possible confusion of the operator. For those reasons, the present method of displaying train descriptions in Western Region panel schemes was to divorce the describer from the signalling control panel proper, and to employ instead a separate display field, of similar "mosaic tile" construction, placed at eye level on a ledge at the rear of the control panel.

This describer display panel carries a track line diagram of the main running routes in the layout for which train description facilities are available. Disposed on the track lines at the geographical position of the running signals to which they refer are miniature, four-character display units. Each unit is situated as far as possible vertically above the associated signal berth track circuit indication on the control panel, so facilitating rapid correlation of track circuit occupation and train description. The characters of the description code are exhibited as illuminated figures and letters which appear in four adjacent apertures provided at each display position.

Alongside these apertures are two pushbuttons for clearing the display and interposing from the set-up unit respectively, together with space for two additional visuals which may be equipped where it is necessary to show indications qualifying the main description.

To assist the operator in associating at a glance the apertures, pushbuttons and visuals forming the display unit, these are enclosed by a border line, with the number of the signal in question alongside. As a further assistance to the operator, the signal post telephone call lamp and answer pushbuttons are also located adjacent to the display unit of the signal to which they refer.

Facilities are necessary to enable the descriptions of originating train movements to be set up and interposed into the appropriate display unit. In the Western Region describer a standard telephone dial is used for set-up purposes, the required figure/letter combination being "dialled" as in automatic telephone practice. Each character appears in a verifying display unit when it has been dialled, and a "set-up effective" visual becomes illuminated when all four characters have been successfully dialled. A dial has been chosen for set-up purposes as a convenient generator of the trains of impulses required for the Western Region describer mechanism. In other techniques where codes are stored as a pattern of energised relays, Mr. Leach maintains, pushbuttons may be more convenient and speedier in operation.

Discussion

Those who participated in the ensuing discussion included Messrs. J. F. N. Tyler, A. Cardani, C. H. Codd, J. Barrs, and L. W. H. Lowther. The Operating Department of the Western Region was praised for framing standard conditions of operation which allowed standardisation of equipment.

The use of two diagrams, one for the control of signalling and the other for the train description display, was criticised.

It was suggested that this was only the beginning of that stage of development and in course of time it would be possible to incorporate the train description on the signal panel and place it on the track on the approach side of the signal. The difficulty was to make the numbers small enough yet capable of being distinguished by the operator without eyestrain.

A member of the Operating Department asked if the dialling system of setting up descriptions had any virtue over the pushbutton method used in other systems. Mr. Leach replied the dial was used as a convenient method of obtaining the impulses necessary for the train description and made the circuits more simple. It took the signalman about 4 sec. to dial four digits.

Parliamentary Notes

Re-organisation of B.T.C. and British Railways

Consideration by Government of implications of Guillebaud Committee Report and proposed action to remedy financial condition of B.T.C.

The Prime Minister, Mr. Harold Macmillan, made a statement on March 10 on nationalised transport undertakings.

The position of the British Transport Commission, he stated, had to be considered in all its aspects, commercial, financial and social. From the commercial point of view, the expansion of the economy had not led to the recovery in railway earnings which might reasonably have been expected some years ago. The carriage of minerals, including coal, had gone down. At the same time, there had been an increasing use of road transport in all its forms.

B.T.C. Deficit

The Commission's total deficit had increased very rapidly over the last five years and now amounted to some £350 million. For the calendar year 1960 the deficit was estimated at £80 million, which included interest on British Transport stock. This reflected an operating loss on the railways which, on present performance, was estimated at £45 million, and included allowance for the 5 per cent interim addition to wages. Besides the £80 million, there was the interest on the advances to meet accumulated deficits. This was now running at about £15 million.

The Government had been informed by the Commission that it had proposed that the Guillebaud Report should be studied in the normal negotiating committee of the industry. It was a complex subject, as it dealt not only with the level of wages but also with the grading of jobs and differential wage rates. The implications on the finances of the Commission would have to be taken into account by the Government in considering action to take on the present difficulties of the industry.

Main Object of Report Accepted

The Government accepted the objective underlying the report of the Guillebaud Committee, that fair and reasonable wages be paid to those engaged in the industry, but it felt that others, also, must accept corresponding obligations.

First, the industry must be of a size and pattern suited to modern conditions and prospects. The railway system must be remodelled to meet current needs, and the modernisation plan must be adapted to this new shape. Those working in the industry must accept this. This was the only way of bringing about conditions in which a fair reward, not only in terms of money, but of satisfaction with their job, could be secured.

Reduction in Services

Secondly, the public must accept the need for changes in the size and pattern of the industry. This would involve certain sacrifices of convenience, for example, in the reduction of uneconomic services. Some increases would also have to be made in fares and charges. The Commission intended to take action in this respect as soon as possible.

It would also be necessary to examine urgently the question of relieving the industry of restriction and obligations which limited the Commission's earnings and prevented it from making the best use of its resources.

Alteration in Structure of B.T.C.

Thirdly, the Commission must accept a radical alteration of its structure, so as to secure a more effective distribution of functions and a better use of all its assets. Measures of re-organisation should include decentralisation of management so that individual undertakings, including the Regions of the British Railways, should as far as practicable, be made fully self-accounting and responsible for the management of their own affairs. The detailed application of these principles to all the B.T.C. undertakings was a matter of urgency and would be worked out by a special planning board.

Planning Board

Legislation, besides administrative action, would certainly be required. This planning board would be appointed by the Government and would report both to the Government and to the Commission. Meanwhile, the Commission was securing expert advice on the question of Regional accounting for the railways.

Finally, there was the problem of finance. Here, there was both a short-term and a long-term problem. In the short term the problem was to devise interim financial arrangements to enable the railway system to be carried on until the necessary re-organisation could be made effective. The Government was now considering what form these should take.

In the long term, the financial arrangements must depend on the size and structure of the undertaking, and must, indeed, form an essential part of the general re-organisation. The life and trade of the nation required a railway system, but it must not be allowed to become an intolerable burden.

The Commission, the trade unions, the public and the Government would all have to co-operate in this new approach. Mr. Macmillan felt sure they were in the mood to do so.

Mr. Harold Wilson (Huyton—Lab.) said that it was clear the Cabinet was still sharply divided on this issue. That was the reason why, despite the fact that it had all the information necessary to come to a decision, there was so little that was firm that was being put forward.

The Prime Minister should be congratulated because he had resisted pressure from behind him to hive off for private enterprise the more profitable parts of the Commission's activities. He assumed the Prime Minister would be arranging for a full debate on these questions in which the House could take part.

Decentralisation of Management

When Mr. Macmillan referred to decentralisation of management, Mr. Wilson asked, did he mean administrative decentralisation carried out by the Commission or was the Government flirting with the quite unworkable proposal that they had read about, involving separate public boards to operate each of the transport Regions ?

Secondly, would the Prime Minister give an assurance with regard to the Guillebaud Report (and they welcomed what he had said on this so far as it went) that there would be no Government interference with the working of the conciliation machinery in the industry which would prevent the full and early implementation of the Report ? He should also recognise that that could only be done if the Government proposed a really radical solution and radical reconstruction of the Commission's finances.

Mr. Macmillan retorted that Mr. Wilson should not judge the divisions of the Conservative Cabinet by the state of his own party.

There should be an amicable settlement of the wages question and all that went with it. He did not want to say or do anything that would prevent that taking place. The Guillebaud Report was not to the Government but to the Commission and to the unions, arranged for by them.

They should let that procedure go on and then see what was involved in the short-term finance, which the Government must make available as it did not exist in the resources of the Commission. The main thing was to get that over in an amicable way with the hope held out before all the people, the trade unions more than all, that they might be able to make of the industry something much more satisfactory to all those employed in it.

Form of Re-organisation

As regards the form of the re-organisation, the whole structure required complete review, without it taking away responsibility from where it ought to be, with those in the direct management of the various concerns. Secondly, it tended to become a top-heavy structure in which, however good those at the top were, they were not really the people to control it effectively.

It was right first to consider the problem of short-term finance, what was to be done in the next few months or years, and then, as part of the reconstruction, and probably as part of the Bill, to consider any long-term reconstruction of capital or change of the whole capital structure.

Development of Land Assets

There were, Mr. Macmillan believed, assets available which could be handled and used by those most expert in this task. That meant, perhaps, that some of the land assets, some of the development assets, should be handed over to a special body acquainted with these matters, and not left as one of the enormous functions of the Commission today. Beyond that he would not go.

Sir Richard Nugent (Guildford—C.) said that the Prime Minister's statement that he accepted the general objective of the Guillebaud Report would be well received in all quarters, as would his intention to reconstruct the management and introduce a system of Regional accounting. The very heavy cost of modernisation *plus* the financing of deficits now resting on the taxpayers' shoulders and the cutting out of redundant services and installations were urgent.

Mr. Macmillan stated that he wished to leave the details to be discussed in the proper way. The men in the industry, from top to bottom, must accept that the Government had a right, as it was now producing the only source of revenue, the taxpayer's money, on which the industry could run, to take a much more direct part in the re-organisation of the industry than if it were a prosperous industry. There was that obligation.

Closure of Certain Lines

The public must accept that it could not ask the industry to take on some of the old functions such as fell upon a common carrier, and some of the old restrictions which were quite reasonable when the railways were a monopoly, of which there were signs still, and it must also accept the inconvenience of certain lines being closed and other means of transport being made available.

The Commission must accept that it would help all concerned in trying to solve this matter not on theoretical or doctrinaire

lines, " but in the way that we think can be made the best for everybody concerned."

In reply to Mr. Wedgwood Benn (Bristol S.E.—Lab.), Mr. Macmillan said that some sites and other assets ought to be sold. The Treasury was owed £350 million. This was a matter for study. The people likely to be employed to do this were those most expert in these matters.

Mr. A. E. Cooper (Ilford S.—C.) asked whether the proposed legislation was to be dealt with during the present session. He hoped the Prime Minister would make it clear that the Guillebaud Report referred to the railways only and was not a general signal for an all-round increase of wages.

The Prime Minister: " The whole House, and all the trade union world, have accepted that the railways have been in a rather exceptional position, to which the Guillebaud Report refers, and none of us, after all that we have gained in the stability of prices, wants to set off something that will lead to a great wage price spiral again. We must work quickly. I want to get a certain number of men charged with this job. Some of it can be done administratively, but it will be necessary to have legislation, and it would not be possible to get that legislation introduced until the autumn."

Further Re-organisation Undesirable

Mr. P. Collick (Birkenhead—Lab.) asked if the Prime Minister realised the consternation which will be felt among railwaymen about some parts of his statement, particularly those parts in which he again envisages the re-organisation of British Railways.

They had already had three schemes for the re-organisation of railways from the Government since it had been in office, and all the time the railwaymen have been left high and dry. Unless the Guillebaud recommendations were operated quickly, more and more highly skilled operating railwaymen would be lost.

As to re-organisation, if it was really needed, Mr. Collick added, that the only case for it was to put the railways under the direction of experienced railwaymen. If that was done, there might be some hope, but for the rest there was very little indeed.

Mr. Macmillan pointed out that the first thing was to get the wage question agreed. That they hoped to get done quickly. If the Government was to advance very large additional sums of money, which it must do whatever the agreement was, then there was an obligation on everybody to approach the other problems with a fair and open mind.

Morale of Railwaymen

That was all he asked. He believed that that would appeal to the men in the railway industry. He knew a little about it, as he was in it for many years himself. They wanted to make people feel not only that they had a fair wage, but that all concerned, right from the higher management down to the men, were in an industry of which there was a fair chance of making a good show. It broke one's heart to see an industry piling up deficits year after year. Men wanted to be in an industry which had a chance of really making a show.

Long-term Finance

The Chancellor of the Exchequer, Mr. Macmillan added, would deal with the short-term finance when he had to make specific proposals and they knew what they were and what they had to carry. Long-term finance and any question of capital re-organisation would be more appropriate in the general re-organisation and would almost certainly require legislation.

Mr. W. T. Proctor (Eccles—Lab.): " The Prime Minister's statement that the Government contemplates re-organising the Commission will be accepted with mixed feelings by the railwaymen and many others. The policy of the Government so far has been to sell the prosperous and keep the bankrupt as regards this industry. As the Prime Minister has informed the House that he proposes to set up a body to advise the Commission and the Government on the future of the railways, could he give a guarantee that the body will be impartial as far as possible?"

Mr. Macmillan replied that the body would be impartial, and advise the Government. The Chairman and the Commission had told him that they would do everything they could to help it. It would consult the trade unions. When it came to the proposals, " we shall have to take the full responsibility, but I say again, and I say it sincerely with real affection for the railways, that we must try to get the highest agreement that is possible. We must agree that if fair and reasonable wages are to be paid, which I think is right, in an industry which is losing as much money as this, everybody is under an obligation, in return, to play their part in any form of re-organisation which may help it to do better."

" Railways Will Never Pay "

Mr. T. Steele (Dunbartonshire W.—Lab.): " The railways are probably the most re-organised organisation in this country and this has been going on since 1920, when I first joined the service. I cannot understand why he tries to bring a complicated solution to a simple problem. The railways will never pay and the railwaymen want more money. What is in the mind of the Government in respect of trying to ascertain the profitability of each area? This can only be done by the re-introduction of the old Railway Clearing House system, which was a failure before. That would be not only unwise, but would be expensive and would require a great deal more sacrifice to carry out."

Separate Accounting

The Prime Minister: "I remember that system very well. That is why an expert committee is already at work discussing the possibilities of separate accounting. It may be found to be impossible, I hope not, but it has great advantages, because it is the way in which many great industries are run. It gives to the management and to all others concerned in their particular jobs a sense of reality, and an opportunity of seeing the effect and it makes it much more easy to do uneconomic things, should it be decided that these should be done for good social purposes.

" Also, it makes it much easier for Parliament to say, ' All right, we agree to that. We cannot blame the management because there is a loss since the management has told us that certain lines cannot be run at a profit.' If we want something done, then at least we cannot put upon the management the obloquy of having operated at a loss. There are great advantages, if it can be achieved, in a sense of pride in the various organisations.

" As to the statement that this is a simple problem, I wish he was right. To say that the railways must always be run at a loss, and that the men must be paid more money, would be a very defeatist view for those who believe in general nationalisation. "

Debate on Transport

Mr. Hugh Gaitskell, Leader of the Opposition, asked the Leader of the House [Mr. R. A. Butler], whether the Government would find time for an early debate.

Mr. Macmillan said he would consult the Leader of the House. He did not want to shirk a debate, but he asked Mr. Gaitskell seriously to consider the question of a debate in the light of the developments of the next few days which might arise out of the hope of a good solution of the immediate wage problem.

Mr. Gaitskell replied that he did not think it necessary that they should, in the course of debate, get involved in wage negotiations, but many other issues apart from that could usefully be discussed.

Liberal Party Motion on Transport

The Liberal Party, headed by Mr. J. Grimond (Orkney & Shetland), tabled in the House of Commons on March 9, for debate at an early date, the following motion:

" Railway Reforms: That this House, while welcoming H.M. Government's belated recognition of the need for reforms in relation to the railways, many of these reforms having been continuously urged over the past eight years, deplores the absence of any comprehensive plan, and notes that the creation of yet another board, the planning board, is evidence of H.M. Government's lack of confidence in both the Minister of Transport and the British Transport Commission, who should either be trusted to carry out the necessary reforms or should be replaced."

Statement in House of Lords

In the House of Lords, Viscount Hailsham, Lord President of the Council, made a statement on March 10, similar to that made in the House of Commons, on the position of the railways.

Viscount Alexander of Hillsborough hoped there was to be no question, apart from closing some uneconomic branch lines, of so reducing the size of the industry as to interfere with its strategic value.

Lord Hailsham said that clearly the Government regarded the whole question in all its bearings as urgent.

In reply to a suggestion by Lord Morrison of Lambeth, that trade union leaders of experience should be on the planning board, Lord Hailsham said that the composition was not yet settled, but that the Government wished the planning board to be as small as possible.

Railway Noises

Mr. Robert Speir (Hexham—C.), moving the second reading of his Noise Abatement Bill on March 4, explained that under subsection (2) of Clause 2, British Railways had an escape clause. He was not sure that it ought to remain, but he was told it was standard practice, and that there were many precedents for British Railways having a statutory let-out. British Railways were under attack from many different directions and he did not wish to add to their burdens.

Mr. J. B. Hynd (Attercliffe—Lab.), said he had known cases where railway authorities had altered their arrangements to minimise noise. A watering point near to some houses had been removed elsewhere, and time-tables had been re-cast.

Lt.-Commander S. L. Maydon (Wells—C.) thought it was a pity that the railways should be exempt. Steam locomotives, among the largest perpetrators of noise, would soon be obsolete, and diesel and electric locomotives could be adequately silenced.

Questions in Parliament

Railways Claims on Defence Forces

Mr. A. J. Irvine (Edgehill, Liverpool—Lab.) asked the Minister of Defence on February 17 whether the sum of approximately £13 million recoverable during the current financial year by British Railways from the Defence Vote represented a total of charges for the carriage of service passengers and freight arrived at by applying the normal rates charged to other passengers and goods.

Mr. Harold Watkinson, in a written answer: Except for a few agency services of which the full cost is paid, this represents the cost of normal rates or of rates under agree-

ments negotiated in the normal way, as between British Railways and a large-scale user.

Factory Inspectors for Railways

Mr. Leslie Spriggs (St. Helens N.—Lab.) asked the Minister of Labour on February 17 to state the number and type of premises, as defined in Section 25 of the Factories Act, 1959, visited by the Factory Inspectorate within the railway industry.

Mr. Peter Thomas, Parliamentary Secretary: No such visits have been made as the Section is not yet in operation. My officials are consulting with the Ministry of Transport and the B.T.C. about certain problems which will arise when the Section is brought into operation. The Minister's aim is to bring it into operation at the earliest practicable date.

Inquiry into Nationalised Industries

Mr. Woodrow Wyatt (Bolsover—Lab.) asked the Prime Minister on February 23 whether he would recommend appointment of a Royal Commission to inquire into the methods of operation and system of accountability of the nationalised industries.

Mr. Macmillan: No. I do not feel that a Royal Commission would be a suitable piece of machinery to help to solve this problem.

Mr. Wyatt: As the Conservative Party has been running the nationalised industries for nearly 10 years, nearly three times as long as anyone else, will the Prime Minister not admit that if there is anything wrong with them or anything which makes them unpopular, it is entirely the fault of the Conservative, and not the fault of the Labour, Party? Will he start doing his duty by them instead of using them to manipulate for party political purposes?

Mr. Macmillan: I have always tried to be a peacemaker, and I think that what the hon. Member has said may be a useful contribution to the difficult and delicate problem of Clause 4 [the nationalisation clause in the Labour Party constitution].

Railwaymen's Pensions

Dame Irene Ward (Tynemouth—C.) asked the Minister of Transport on February 19 to ensure that part of the liability for the newly-agreed increase in respect of railwaymen's wages, which was transferred from the B.T.C. to Government account, would also include an item in respect of railway superannuitants to cover a rise consistent with the Pensions (Increase) Act, 1959.

Mr. Ernest Marples, in a written answer: Any question of increasing pensions for railway superannuitants is primarily a matter for the B.T.C.

Carriage of Coal by Road

Earl Howe asked the Government in the House of Lords on March 3 whether it was intended to transport large quantities of coal by lorries, and, if so, what was the reason.

Lord Mills, the Paymaster General: The means by which coal is transported is the free choice of the consumer or the coal trade which serves them. The choice is no doubt largely influenced by the changing economic factors, but in 1959 the proportion of coal carried by road was a little less than in the previous year.

Earl Howe: An announcement was made the other day that in the North of England coal to the extent of 50,000 tons was to be carried by road and not by rail, as it had been hitherto.

Lord Mills: It was an arrangement between the National Coal Board and the B.T.C. because of lack of labour on the railways. It is a short-term arrangement. Actually, about 25,000 tons a week are being moved. It is intended that the coal shall go back to the railways as soon as they can handle it.

Electrification in Scotland

Mr. Hector Hughes (Aberdeen N.—Lab.) asked the Minister of Transport on March 3 how far the capital development plans for the electrification of British Railways in Scotland had been developed and extended during the last five years.

Mr. Ernest Marples, in a written answer: Good progress has been made with the electrification of suburban lines in the Clyde Valley around Glasgow. Test running is taking place on a six-mile section of the 51 route-miles scheduled for electrification on the north side of the river and it is expected that the first of the public services will be introduced in 1960. Electrification of a further 19¾ route-miles on the south side of the Clyde is also planned.

Road v. Railway Track Fencing

Mr. C. Mapp (Oldham East—Lab.) asked the Minister of Transport on March 3 to state the capital and maintenance costs per mile of highway fencing on the M.1 road; and whether, in formulating his proposals for financial assistance to the railways, which now bear the total cost of track fencing, he would consider making a comparable grant.

Mr. Marples stated in a written answer: The capital cost of fencing the M.1 Road was £3,100 for each mile of highway, and the average annual maintenance cost would be about £40 a mile.

Staff and Labour Matters

Report of Pay Review Committee

The first meeting between the British Transport Commission and the three railway trade unions since the issue of the Guillebaud Report took place on March 10. After a preliminary exchange of views in regard to the report, it was arranged that a further meeting should take place as soon as possible.

The fact that more detailed discussions did not take place was not unexpected because the Government on the same day was discussing the financial position of the railways in relation to the report.

Railway Workshop Staff

A meeting of the Railway Shopmen's National Council took place on March 15 in connection with the claims of the Employees' Side of the council for improved rates of pay and conditions of service for railway workshop staff.

After a lengthy discussion, the meeting was adjourned until Monday, March 21, to enable both sides to consider the position in the light of the views exchanged.

London Busmen

Subject to endorsement by a delegate conference on March 21, London busworkers are to receive an increase in wages as from March 16, 1960, following agreement at a meeting on March 15 between representatives of the London Transport Executive and of the Transport & General Workers' Union.

Drivers and conductors will receive an increase of 10s. a week, semi-skilled maintenance men will get 8s. 6d., and unskilled garage workers will get 8s.

Municipal Bus and Tram Workers' Pay

Improved rates of pay and reduced hours of work are likely to be introduced for some 58,000 municipal bus and tram workers.

A joint wages committee has agreed to recommend to the full Joint Industrial Council on March 22, that wages should be raised by amounts varying from 5 to 6·4 per cent, and that working hours should be reduced from 44 to 42 per week without loss of pay. Employees with more than 10 years' continuous service will have an extra three days holiday.

The effect of the proposed increases will mean that the weekly rate of the highest paid driver will be increased by 10s. 6d. and that of the conductor by 10s. 3d. Improvements for maintenance workers will range from 9s. 2d. to 10s. 9d.

GLOUCESTER RAILWAY CARRIAGE WAGON & CO. LTD. INTERIM DIVIDEND.—For the year ending May 31, the interim ordinary dividend of the Gloucester Railway Carriage & Wagon Co. Ltd., is being reduced to 3¼ per cent from 5 per cent previously. The previous final payment amounted to 10 per cent.

FLUIDRIVE ENGINEERING CO. LTD. RESULTS—The ordinary dividend of Fluidrive Engineering Co. Ltd. for the year ended September 30, 1959, is being raised to 12 per cent from 10 per cent for 1957-58. Group profits were £94,897 compared with £93,628, after tax of £70,709 (£70,555).

FLAME CLEANING OF WELDED UNDERLINE BRIDGE.—Flame cleaning was carried out before repainting of a welded bridge carrying the Cardiff–Swansea main line of British Railways, Western Region, over a tributary of the Taff at St. Fagans, Cardiff. Large areas of a heavy paint coat had become detached from the steelwork. The structure was completely flame cleaned before application of a primer paint coat. The main structure of the bridge consists of three girder sections each 110 ft. long with an average depth of 7 ft. Four oxy-acetylene flame cleaning outfits, manufactured by British Oxygen Gases Limited, were used. The cleaning and re-painting took three months, during which time normal railway traffic was maintained, and 46,000 cu. ft. of oxygen and acetylene were consumed.

METROPOLITAN RAILWAY COUNTRY ESTATES LIMITED RESULTS.—Metropolitan Railway Country Estates Limited results for the year ending October 31, 1959, were, with the exception of one previous year, the best in the company's history. Group profits before taxation were £80,185, compared with £77,869 in 1958 and taxation took £32,226 compared with £33,798 in the previous year. A dividend was declared at the same rate of 15 per cent on the capital as increased by the one in five scrip issue in March, 1959, to add £9,371 to undistributed funds. The balance brought forward last year was £169,094, out of which £120,000 was transferred to general reserve.

ADDITIONAL STOP FOR BRITISH RAILWAYS TRAINS AT CHORLEY WOOD.—As part of the improvements being carried out on the Metropolitan Line, London Transport Executive, it has been decided, in agreement with the London Midland Region of British Railways, to lengthen Chorley Wood Station platforms to enable them to be used by London Midland Region trains. When the construction works are completed in 1962 and the new services are introduced, British Railways trains will make Chorley Wood their first stop from Harrow-on-the-Hill, calling thereafter at all stations to Aylesbury. The modification in the services which has been decided on is in accordance with the views of the Central Transport Consultative Committee, which recommended that, if any further improvement were to be made in the services of the area, this should include one additional stop only on the British Railways service at Chorley Wood.

Contracts and Tenders

Portuguese cable order for B.I.C.C.

British Insulated Callender's Cables Limited has received an order from the Lisbon Electric Tramways Limited to provide a link between the Portuguese C.N.E. substation at Moscavide and the Lisbon Electric Tramways substation at Arco do Cego. The order calls for the supply, supervision of installation and jointing of 9,750 yd. of 33-kV. three-core aluminium-sheathed impregnated pressure cable. This is a further link in the Santos-Xabregas-Moscavide route, for which B.I.C.C. supplied and installed cables in 1955. The new cable differs from that of the earlier contract in that it is of an improved aluminium-sheathed design.

In addition, B.I.C.C. has received the order for the supply of approximately 9 km. of 10- and 15-pair 20 lb. /mile unit twin telephone cable, and accessories, to be installed with the 33-kV. cable. Cabos Armados e Telefonicos, Lda, the B.I.C.C. associate company in Portugal, will manufacture this telephone cable. Installation is expected to commence in May.

Head Wrightson Iron & Steel Works Engineering Limited has received a contract to the value of some £700,000 for the design and construction of a materials handling and iron ore sintering plant for the Skinningrove Iron Co. Ltd.

The British Transport Commission has placed a contract with Easco Electrical (Holdings) Limited for the design, manufacture, and installation of passenger announcement and public address amplifying systems for Harlow Station, Eastern Region, and Stratford-on-Avon Station, Western Region, British Railways.

British Railways, Eastern Region, has placed the following contracts:

M. J. Gleeson (Contractors) Limited: construction of reinforced concrete bond walls, oil fuel pumphouse and associated drainage for the fuel installations at Temple Mills Motive Power Depot

The Cementation Co. Ltd.: construction of concrete culvert, and forming of embankment in replacement of underline bridge No. 36, between Radcliffe-on-Trent and Netherfield & Colwick

Thermit Welding (Gt. Britain) Limited: supply and delivery of rail warming equipment

The General Electric Co. Ltd.: supply, delivery and erection of structural steelwork for 10 gantry spans and supply and delivery of lanterns, lamp control gear, and cast iron weatherproof boxes at Chingford and Enfield town

Drake & Gorham (Contractors) Limited: supply, delivery and installation of e.h.v. and m.v. cables, e.h.v. and m.v. switchgear, transformers, rectifier, and associated equipment at Norwich Thorpe.

British Railways, Southern Region, has placed the following contracts:—

C. Jenner & Son Ltd.: carriage servicing stages, extension of electrification, Folkestone Junction

G. E. Wallis & Sons Ltd.: improvements to staff accommodation, Waterloo

A. Cameron Limited, cleaning and painting of bridges, areas "A" and "D," London (Eastern) District

C. & T. Painters Limited: cleaning and painting of bridges, area "B," London (Eastern) District

Wm. Latimer & Co. Ltd.: cleaning and painting of bridges, area "C," London (Eastern) District

John Laing & Son Ltd.: construction of luggage bridge, Folkestone Junction

G. E. Wallis & Sons Ltd.: staff accommodation, Wimbledon

G. N. Haden & Sons Ltd.: centralisation of boiler house, heating installation, Wimbledon Depot

The Cleveland Bridge & Engineering Co. Ltd.: reconstruction of Plough Road Bridge, Clapham Junction

W. R. Payne & Sons Ltd.: station renovations, Dover Marine

The Demolition & Construction Co. Ltd.: construction of platforms and new approach road, Hurst Green Station.

British Railways, Scottish Region, has placed the following contracts:

The Motherwell Bridge & Engineering Co. Ltd.: renewal of steel superstructure, underbridge No. 301, Brooms Road, Dumfries

The Lanarkshire Welding Co. Ltd.: strengthening of steel trough deck, Burntisland Viaduct

James Young (Contractors) Limited: reconstruction and widening, overbridge No. 78, Cardross Mains Farm, between Dalreoch and Renton.

The Export Services Branch, Board of Trade, has received calls for tenders as follow :—

From South Africa :

1,100 sealed beam locomotive headlight lamps 200W. 30V. P.A.R. 56 bulb with screw terminal base

Alternatively:

4,400 or 6,000 of the above item.

The issuing authority is the Stores Department, South African Railways. Bids in sealed envelopes, endorsed "Tender No. C.8189; Sealed beam Locomotive Headlight Lamps" should be addressed to Chairman of the Tender Board P.O. Box 7784, Johannesburg. The closing date is April 8, 1960. The Board of Trade reference is ESB/6876/60.

1 complete 12-channel carrier system.

The issuing authority is the Stores Department, South African Railways. Bids in sealed envelopes, endorsed "Tender No. C.8167: 12 Channel Carrier System" should be addressed to the Chairman of the Tender Board, P.O. Box 7784, Johannesburg. The closing date is April 8, 1960. Local representation is essential. The Board of Trade reference is ESB/6877/60.

From Portuguese East Africa :

1 dismountable metal scaffolding, complete with all the accessories for its installation, required for repairs to the cupola of the building of the Ports, Railways & Transport Department of Lourenco Marques.

The issuing authority and address to which bids should be sent is the Ports, Railways & Transport Department, Lourenco Marques. The tender No. is 68/60. The closing date is April 27, 1960. A provisional deposit of Esc.5,000 must be made by tenderers. The Board of Trade reference is ESB/6445/60.

From Pakistan :

1. 394,000 two-way steel keys for M.G. 60-lb. rails steel trough sleepers

2. 350,000 spring-steel loose jaws for M.G. 60-lb. rails steel trough sleepers

3. 21,264 tie bars M.S. for C.1 sleepers 60-lb. rails

4. 113,455 side-split M.S. cotters for C.1 sleepers 60-lb. rails

5. 1,000 bolts M.S. black for buffer coupling hooks 6⅛ in. by 1½ in. dia.

6. 7,000 yd. of three-core 0.10 sq. in. paper-insulated lead-covered cable

7. 1,300 yd. of three-core 0.0225 sq. in. paper insulated lead-covered cable.

The issuing authority is the Chief Controller of Stores, Eastern Bengal Railway, Pahartali, Chittagong. Tender forms can be obtained from the office of the Chief Controller of Stores on payment of Rs.25 a set. The tender No. for items 1 and 2 is PT/D1/46/59; for items 3 and 4, E/D1-/8/55/P1; for item 5, P5/ACST/EBI/17/60; and for items 6 and 7, P3/HD/408/58. The closing date for items 1 to 4 is April 5, 1960, and for items 5 to 7, April 6, 1960. No further information is available at the Board of Trade. The Board of Trade reference is ESB/6900/60.

From Victoria :

1,500 sensitive door edges 6 ft. 2½ in. long to Commonwealth Engineering drawing L.740 item 20.

The issuing authority is the Victorian Railways, Melbourne, C.1, to whom bids should be sent. The tender No. is 61.669. The closing date is April 6, 1960. The Board of Trade reference is ESB/7244/60.

Further details relating to the above tenders together with photo-copies of tender documents, unless otherwise stated, can be obtained from the Branch (Lacon House, Theobald's Road, W.C.1).

Notes and News

Questions in Parliament.—Mr. A. E. Cooper, Member of Parliament for Ilford South, is a Member of the Conservative and not of the Labour Party, as was stated in error on page 321 of our March 11 issue.

Westinghouse Brake & Signal Co. Ltd. at the Mechanical Handling Exhibition.—On its stand at this year's Mechanical Handling Exhibition, to be held at Earls Court from May 3 to 13, Westinghouse Brake & Signal Co. Ltd. will show examples of its wide range of pneumatic control equipment that is applicable to the varied needs of industry and mechanical handling. In particular, a working layout of typical control equipment for a modern excavator is shown, together with a demonstration panel of positioning equipment, remotely controlled valves, and examples from a wide range of double acting air cylinders. A colour film with commentary showing applications of pneumatic control as applied to ships, excavators, railcars, aircraft runway sweepers, and various industrial purposes will also be shown.

Delegation from Finland.—A.E.C. Limited and Simms Motor Units Limited were joint hosts to a party of Finnish Government officials last week during a 48-hr. visit to England. Included were Mr. Klaus Hakkanen, Permanent Secretary General in the Ministry of Communications & Public Works; Mr. Uno Havu, Chief of Department in the Ministry for Financial Affairs; and Mr. Vilho Koivisto, Managing Director of the Pohjolan Liikenne Oy. road transport organisation owned by the State Railways. Accompanying these visitors was Mr. Eero Kytola, of Vanajan Autotehdas Oy., which recently placed an order for A.E.C. engines to the value of over £250,000. The visitors

toured the factories of both the host-companies and were joined later by more than 50 Finnish transport operators who are spending four days with the British companies sponsoring the visit.

Diversions on London Midland Region.—Heavy engineering on the permanent way last week-end in preparation for the electrification of the main lines between Euston, Manchester and Liverpool, British Railways, London Midland Region, meant the diversion *via* Birmingham and Chester of the main express trains to the north-west. Some trains on the St. Pancras-Manchester line were diverted. Because of engineering work at Marylebone, services between Marylebone, Aylesbury, Brackley Central, Woodford Halse, Rugby Central, Leicester Central, Loughborough and Nottingham, Victoria, ran from Harrow-on-the-Hill.

Visit of Chilean Signal Engineer.—Mr. Luis Falcone, Chief Engineer, Signalling, Chilean State Railways, arrived in Britain early this week for a discussion under the auspices of the United Kingdom Railway Advisory Service, on railway modernisation and allied problems. He inspected railway installations and equipment and works of suppliers of railway material. Earlier in the week he visited the works of Westinghouse Brake & Signal Co. Ltd., and Siemens & General Electric Railway Signal Co. Ltd. He was entertained to dinner on March 17, at the Charing Cross Hotel, London, by Brigadier A. E. M. Walter, Head of the International Inland Transport Branch, Ministry of Transport, Chairman of U.K.R.A.S, and by other members of U.K.R.A.S. Mr. Falcone leaves today (Friday) for Paris *en route* to Chile.

British Railways New Research Centre.—Sir Brian Robertson, Chairman of the British Transport Commission, formally opened the British Railways chemical research laboratories built on the site of the former Alexandra Palace Station at Muswell Hill, London, on March 11. At the opening ceremony he was welcomed by Mr. T. M. Herbert, Director of Research (British Railways), B.T.C., and spoke of the importance of this first stage in the modernisation and expansion of British Railways Research Department which will perform an essential service to the London area and elsewhere. The illustration shows Sir Brian Robertson making his opening address with, left to right, Professor D. M. Newitt, Chairman of the B.T.C. Research Advisory Council, Mr. T. M. Herbert, Mr. F. Fancutt, Assistant Director of Research (Chemical Services), B.T.C., and Mr. J. Ratter, Member of the B.T.C. Editorial reference is made elsewhere in this issue.

"Murder at the Vicarage."—The Diamond Players, members of the staff of the Siemens & General Electric Railway Signal Co. Ltd., gave an excellent performance, last Friday, of "Murder at the Vicarage," by Agatha Christie. Like other dramatic productions by these players, this took place in the Hirst Hall on the G.E.C. Estate, North Wembley. An outstanding achievement was the omniscient and voluble, but inscrutable, Miss Marple, portrayed by Joyce Jarvis. The Vicar was convincingly played by D. O. Collingwood, and his wife, an exacting role, by Ina Partridge. All contributed by their acting of well-delineated character to preserving the mystery of the identity of the murderer until the last scene, and the atmosphere of suspense was maintained until the dénouement.

Extension to Sheffield Factory, Keeton, Sons & Co. Ltd.—A new fabrication shop has been added to the Sheffield works of Keeton, Sons & Co. Ltd., a member of the Firth Cleveland Group. The company will be able to construct all future Keetona sheet metal-working machinery in fabricated steel, in preference to cast iron. Although the company's foundry has been closed down, arrangements have been made for the casting of components for the maintenance of existing Keetona models. The new shop is a pre-cast concrete construction covering a total floor area of 8,000 sq. ft. It offers facilities for flame cutting plate up to 8 in. thick, 20 ft. long, and 6 ft. wide. The equipment includes sawing, welding, bending and straightening machines, and two 3-ton capacity cranes.

Traffics Maintained by Eastern Region.—During the nine weeks ended March 6, British Railways, Eastern Region, showed an overall improvement in its trading position for railway passenger and freight traffic, as compared with last year, of £665,000, or 4·8 per cent. Receipts amounted to £14,427,000. Passenger business increased by £226,000 (7·5 per cent). A further substantial improvement is expected when the electrification of suburban lines from Liverpool Street to Chingford, Enfield Town, Hertford East, and Bishop's Stortford is brought into use later this year. More than 8,500,000 tons of goods was carried, an increase of 854,700 tons (11 per cent). The largest increase was in general merchandise, of 169,300 tons (16·2 per cent). Minerals, largely for iron and steel manufacture, showed an increase of 255,900 tons (13·3 per cent). Coal and coke traffic increased by 430,000 tons, or nearly 9 per cent.

Overseas Visitors to Britain During January.—A record number of overseas visitors for the first month of the year arrived in Great Britain during January. Figures released by the British Travel & Holidays Association show that 54,300 arrived, an increase of 16 per cent over the January, 1959, total of 46,800. Visitors from European countries totalled 25,900, 12 per cent more than in the same month last year. The total of United States visitors, 9,480, was also 12 per cent up on the previous January's total of 8,400. Commonwealth visitors are estimated to have numbered 15,700 compared with 12,800 in January last year.

Liverpool Edge Hill Goods Depot.—With the mechanisation of the sundries freight depot at Edge Hill, Liverpool, British Railways, London Midland Region, the second stage in the general reorganisation of goods handling in Liverpool and Birkenhead is completed. The first stage involved the building of a new forwarded shed at Spekeland Road. The alterations have been planned to enable electric trucks to be introduced into the depot to facilitate movement and handling of sundries traffic. Traffic for delivery in Liverpool, which is now being received by rail at Birkenhead Morpeth Dock from Western Region stations, will be concentrated on Liverpool and forwarded traffic for Western Region destinations now being collected in Liverpool and despatched from Morpeth Dock will be dealt with at Liverpool depots.

L.T.E. Annual Station Competition.—All the 228 stations on the London Transport Underground take part in the annual competition in which marks are awarded for courtesy, cleanliness, traffic handling, and management. Stations enter either individually or in small groups. Silver shields are presented to the winning stations or groups in each of 10 zones for display in the station booking halls. The winners in the 1959 competition are: Moorgate, Strand, Piccadilly Circus, Notting Hill Gate, Turnpike Lane, Gants Hill; and the following station groups: Tower Hill – Monument – Cannon Street; Alperton – Park Royal – North Ealing; Preston Road – Northwick Park; Finchley Central – West Finchley – Mill Hill East. Gants Hill station is first on the Central Line (Eastern Section) for the eighth time in 11 years, and Strand has now been the best station on the Northern Line (Central and Southern Sections) for six years out of seven. The Finchley Central group has won the shield for the north end of the Northern Line for the third year running.

Modernisation of Bridlington Station, N.E. Region.—British Railways, North Eastern Region, is planning to renew part of the station roof at Bridlington Station and also to modernise the existing accommodation and lighting. Work on the scheme will begin this year. The existing arched roof over platforms 1 and 2 is to be removed and replaced with a new verandah type of roof over the platforms and part of the taxi rank. The lavatories on platforms 7 and 8 and the waiting rooms on the concourse are also to be modernised. Additional toilet facilities and attendant's accommodation are to be provided in the ladies' room in the concourse, and other improvements will be carried out to the lavatories and waiting rooms on platform 1. The ticket barrier and ticket

Sir Brian Robertson speaking at the opening of the British Railways chemical research laboratories, Muswell Hill, London

collector's cabin on platform 1 are to be renewed. The present gas lighting in the main concourse and on the platforms will be replaced by cold cathode electric lighting. Tungsten filament lighting is to be installed in the station buildings, station approach, and taxi rank. Opportunity is also being taken to carry out a number of improvements to the amenities provided for the station staff.

Pondicheri Railway Co. Ltd. Results.—The balance for the year ended March 31, 1958, for the Pondicheri Railway Co. Ltd., is £139 (£3,179), subject to directors' remuneration of £1,100 (same) and tax nil (£1,215 less tax relief £93).

First Consignment to Russia via Harwich-Zeebrugge Train Ferry.—The first through consignment to the U.S.S.R. *via* the Harwich-Zeebrugge train ferry, two tons of furniture and other household items, left London recently on the first stage of its 1,850-mile journey to Moscow. The route is *via* Montzen, Aachen, Frankfurt (Oder), Rzepin, Malaszewicze, and Brest Litovsk. Transhipment is necessary at the Polish/Russian frontier, because of the break of gauge. The delivery date of three weeks affords a considerable saving in time compared with the usual route by sea to a Baltic point and thence by rail. The agents for the consignment were the General Transport Co. Ltd.

Loading at Spitalfields, Eastern Region, of through consignment to Moscow via Harwich-Zeebrugge wagon ferry

London Transport Directional Scheme for Trafalgar Square.—A special directional scheme for Trafalgar Square and its bus routes has been evolved by London Transport to help visitors this year. A new map of the area is being exhibited at a number of points round the square, indicating the exact location of each of the 16 bus stops and giving them reference letters. Corresponding reference letters are displayed on red discs fitted to the tops of the bus stop posts themselves. The maps are sited on bus shelters and at near-by Underground stations. They include information for reaching 54 important places of interest, main line stations, and air terminals by bus from the square. Underground stations are also shown. The scheme will make it easy for people to find the right stop and bus route to take them where they want to go. It may be extended to other major traffic centres in London such as Piccadilly Circus.

Charles Roberts & Co. Ltd. and Birmingham Railway Carriage & Wagon Co. Ltd. Merger Proposals.—Charles Roberts & Co. Ltd. has made an offer to Birmingham Railway Carriage & Wagon Co. Ltd. as a basis for a merger, involving an exchange of ordinary stocks into a new holding company. Negotiations on a possible merger of the two companies were reported in our issue of February 19. The ordinary capital of the new holding company would be in 5s. units. The proposed exchange basis would be three units for each £1 in the Birmingham £990,975 ordinary capital and one for each 5s. unit in Charles Roberts £1,398,150 ordinary capital.

Philips Mercury Discharge Lamps Price Reductions.—The prices of Philips Type MB/U mercury discharge lamps have been reduced. The price of the 250-W. lamp is now £2 14s. (reduced from £2 19s.) and that of the 400-W. £2 19s. (formerly £3 5s.).

Ticket Office Mechanisation at Euston, L.M. Region

[*See our February 26 issue*]

Exterior of ticket office near entrance to Great Hall at Euston

Interior, showing part of Multiprinter ticket printing machine

"MA/V" types. The MB/U lamp is useful in industrial plants and other situations. No magnetic arc deflectors are necessary. The quartz discharge tube increases reliability. All lamps operate on 200-250V.

Rivet Bolt & Nut Co. Ltd. Results.—The Group net profit on the Rivet Bolt & Nut Co. Ltd. for 1959, is £188,297 (£142,412) and the dividend is 12½ per cent. The fixed assets are £972,249 (£911,979), the net current assets are £1,737,436 (£1,682,453).

Paris–Marseilles Express Derailed. — The Paris–Marseilles express train of the French National Railways was derailed near Lyons on March 9. The locomotive became detached from the train in the accident and six passenger coaches and three baggage vans left the rails. One of the coaches fell on its side. Three of the 12 people injured were postal sorters in a mail coach.

Railway Benevolent Institution.—At a meeting on February 22 the Board of the Railway Benevolent Institution granted annuities to five widows, seven members and one child, involving an additional liability of £279 per annum. One hundred and forty gratuities were also granted amounting to £1,295, to meet cases of immediate necessity. Grants made from the Casualty Fund during the month of January amounted to £1,851.

Forthcoming Meetings

March 21 (*Mon.*).—The Historical Model Railway Society, at Caxton Hall, Westminster, S.W.1, at 7 p.m. Impromptu evening on models, drawings and photographs, by members.

March 21 (*Mon.*).—Railway Correspondence & Travel Society, Merseyside Branch, at the Woodside Hotel, Birkenhead, at 7.30 p.m. Paper on "The Manchester to Sheffield electrification and the events leading up to it," by Mr. E. V. Richards.

March 22 (*Tue.*).—Institute of Transport, at the Connaught Rooms, Great Queen Street, W.C.2, at 12.15 for 1 p.m. Informal luncheon. Speaker: Mr. A. J. M. M. Crichton, Managing Director, Peninsular & Oriental Steam Navigation Company.

March 22 (*Tue.*).—Institution of Civil Engineers, at Great George Street, Westminster, S.W.1, at 5.30 p.m. James Forrest lecture: "Plastics in engineering," by Mr. R. Beeching.

March 23 (*Wed.*).—Railway Students Association, at the London School of Economics & Political Science, Houghton Street, Aldwych, W.C.2, at 6.15 p.m. Paper on "Wagons—their use and misuse," by Mr. F. C. Margetts, Assistant General Manager, British Railways, North Eastern Region.

March 23 (*Wed.*).—British Railways, Southern Region, Lecture & Debating Society, at the Chapter House, St. Thomas' Street, S.E.1, at 6 p.m. Reading of prize essay and annual general meeting. Mr. C. P. Hopkins, General Manager, and President of the Society, in the chair.

March 24 (*Thu.*).—Permanent Way Institution, Nottingham & Derby Section, in the Midland Hotel, Derby, at 7 p.m. Paper on "Visit to Russia," by Mr. A. H. Emerson, Electrical Engineer, London Midland Region, Derby.

March 24 (*Thu.*).—The Model Railway Club, at Keen House, Calshot Street, King's Cross, N.1, at 7.45 p.m. Paper on "The Vale of Rheidol Railway," illustrated, by Mr. C. R. Wood.

March 26 (*Sat.*).—Railway Correspondence & Travel Society, Cheshire Rail Tour.

March 26 (*Sat.*).—Railway Students' Association. Visit to Brush Electrical Engineering Works, Loughborough.

March 28 (*Mon.*).—Institute of Transport, Metropolitan Section, at 80, Portland Place, London, W.1, at 6 p.m. Paper on "Electronics and transport," by Mr. G. H. Hinds, Electronics Advisory Officer, British Transport Commission.

March 28 (*Mon.*).—The Railway Correspondence & Travel Society, Northampton Branch, at the Liberal Club, Castilian Street, Northampton, at 7.30 p.m. Paper on "Ex main-line locomotives in industrial hands," by Mr. A. L. F. Fuller.

March 29 (*Tue.*).—Institution of Railway Signal Engineers, Bristol Section, at Chippenham, at 6 p.m. Paper on "Structure and equipment design," by Mr. R. H. Stapley, British Railways, Western Region.

March 31 (*Thu.*).—The Institute of Metals, in the Great Room, Grosvenor House, London, W.1. Annual dinner. Principal Guest, The Prime Minister, Mr. Harold Macmillan.

April 1 (*Fri.*).—The Railway Club, at the Royal Scottish Corporation, Fetter Lane, London, E.C.4, at 7 p.m. Paper on "The remarkable history of the Lancaster Junction Railways," by Mr. M. D. Greville.

OFFICIAL NOTICES

AN Assistant General Manager for the Summer Season is required by the Talyllyn Railway, Merioneth. Period of Contract is months of June, July, August and September and Applicants should be preferably practical men with railway experience. Applications should be made to The Secretary, Talyllyn Railway Co., 344, Lordswood Road, Birmingham, 17.

RHODESIA RAILWAYS. Vacancies for Signals and Communications Engineers. Vacancies exist on the Permanent Staff for Signals & Communications Engineers for service in the Chief Engineer's Department of the Rhodesia Railways.

Preference will be given to applicants who have had previous experience in the design, installation and maintenance of modern colour light signalling and/or telecommunication systems with a Railway Administration or with a firm of equipment manufacturers.

Applicants should hold a degree in Electrical Engineering at a recognised University or be Corporate Members of the Institution of Electrical Engineers. Applicants who have passed Parts I and II of the Institution examinations will be considered for appointment to the grade of Technical Assistant until such time as they become Corporate Members and are, therefore, eligible for transfer to the Professional Grade. Successful candidates will be expected to become Corporate Members of the Institution of Railway Signal Engineers in due course.

The salary scale for Assistant Engineers is £1,000 to £1,800 per annum, plus a Cost of Living Allowance at present calculated on 12 per cent of the basic salary, subject to a maximum of £13 15s. per month. The commencing salary will depend upon previous experience of applicants. The annual increments in the above scale are as follows :—

£1,000 x £100 to £1,200
£1,200 x £50 to £1,500
£1,500 x £100 to £1,800

Further advancement to the grade of District Signals and Communications Engineer on the salary scale £1,800 x £100 to £2,100 is possible as and when vacancies occur. Promotion to these posts is by selection.

Membership of the Contributory Pension Fund and Medical Fund is obligatory and the usual Railway privileges in respect of travelling concessions, leave, etc., will apply.

Income Tax in the Federation is not unreasonable and at the present time, a married man with one child, earning £1,100 per annum, would not be liable.

Housing is provided at a moderate rental for married Engineers; the rental payable is £7 10s. per month for Officers in receipt of a salary under £1,700 per annum, and £10 per month for Officers in receipt of higher salaries.

Full particulars with regard to age, training, qualifications and experience should be submitted together with copies of recent testimonials to: The London Agent, Rhodesia Railways, 241, Salisbury House, London Wall, London, E.C.2, from whom full details regarding conditions of service may be obtained.

Railway Stock Market

There has been a waiting attitude in stock markets, and share prices declined sharply compared with a week ago. Subsequently, growing hopes that the Budget will not bring increased taxes, helped sentiment and buyers were more in evidence. Many shares have now fallen to levels at which yields are attractive, and results of leading industrial companies are showing higher earnings and dividends.

Very little business was passed in foreign rails. In the absence of buyers, Antofagasta ordinary stock receded further from 14¼ to 13½, and the preference stock from 29½ to 29; the 5 per cent (Bolivia) debentures remained at 100. United of Havana second income stock was again quoted at 6 with business at 12s. 6d. in the consolidated stock.

Guayaquil & Quito assented bonds were 77, Chilean Northern first debentures 58, Brazil Railway bonds 8, and Paraguay Central prior debentures 15½. Sao Paulo Railway 3s. units were again 1s. 6d. Costa Rica ordinary stock strengthened from 30 to 30½; the first debentures were again 90, and the second moved up from 93 to 94½.

After their recent fall, which reflected Wall Street, Canadian Pacifics have been steadier, and at $44¼ compared with $44⅜ a week ago; the 4 per cent preference stock remained at 56½, and the 4 per cent debentures strengthened to 64½. White Pass shares at $13½ were virtually the same as a week ago. Mexican Central "A" bearer debentures kept at 59½.

International of Central America came back to $24½, and the preferred stock to $111½.

Nyasaland Railways shares were again 10s. and the 3½ per cent debentures 50½. Midland of Western Australia ordinary stock was quoted at 5½ with the income debentures at 13½. West of India Portuguese remained at 112 with the 5 per cent debentures 94½.

The shares of locomotive and engineering companies have moved lower on balance in unison with markets generally. Gloucester Wagon 10s. shares, which remained under the influence of the unexpected cut in the interim dividend, were 13s. 6d., compared with 16s. 4½d. a week ago. Wagon Repairs 5s. shares receded from 12s. 9d. to 11s. 9d., and Beyer Peacock 5s. shares from 8s. 7½d. to 8s. 1½d. Awaiting news of the outcome of the proposed merger with Birmingham Wagon, Charles Roberts 5s. shares held steady at 15s., but Birmingham Wagon eased from 41s. 6d. to 40s. 7½d. It is unlikely there will be a final decision pending the re-valuation of Birmingham Wagon assets. G. D. Peters were again quoted at 20s. 7½d., but apparently not tested by dealings.

Associated Electrical, which were 58s. 6d. a week ago, came back to 56s. on some disappointment with the unchanged 15 per cent dividend. English Electric declined from 41s. 6d. to 40s. and General Electric from 38s. 6d. to 38s., but Crompton Parkinson 5s. shares at 13s. 1½d. were maintained on balance. Westinghouse Brake at 49s. 9d. lost 1s. 3d. with the general stock market trend.

Pressed Steel 5s. shares at 38s. 6d. have eased from 39s. 6d. to 38s. 6d., Dowty Group 10s. shares from 55s. to 54s. 9d. Stone Platt were 59s., compared with 61s. 9d. a week ago, Vickers lost 1s. at 32s. 9d., and now yield over 6 per cent on last year's 10 per cent dividend, and there has been a sharp reaction from 30s. 6d. to 27s. 9d. in Ruston & Hornsby at which the yield is 5¾ per cent. Guest Keen rallied from 86s. to 87s. 6d. on higher dividend expectations. Holman Bros. 10s. shares were again quoted at 23s. 3d. Broom & Wade 5s. shares came back from 18s. 10½d. to 18s. and Babcock & Wilcox from 42s. 6d. to 41s. 6d.